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THE bursting tests of locomotive boilers, outlined in another column, are notable in a number of their features. It is many years since a deliberate and scientific attempt has been made in this country to explode a boiler, and probably never before have such careful arrangements been made to watch every stage of the process from a condition of safety to rupture, as in this case. At the end, the unexpected and expected occurred. Certainly no one thought, or, if they did, they failed to give utterance to the thought, that the Jacobs-Shupert boiler would come through the ordeal practically unscathed. No one expected an extended coming down of the crown-sheet, but everyone did look for at least a split section that would put the boiler out of commission. On the other hand, the collapsed crown-sheet of the radial stay boiler was quite in accordance with expectations. It is evident, therefore, that we have here a type of construction that must receive earnest consideration on the basis of safety. It is well known that these tests at Coatesville are the climax of a long series, extending over six months, that have been conducted under the direction of Dr. Goss. In the work that has gone before, the details of which have not yet been made public, it is understood that the new type of firebox has shown itself to be equal or superior to the old in such items as rate and economy of evaporation, and circulation—matters that will appear in due time in Dr. Goss' report. Apparently durability and performance in road service are the points that still remain to be cleared. At any rate the work of the past winter, and especially the results of the tests of last week, present important facts for the consideration of railway officers.

IT is notable that the republican national convention did not adopt any plank dealing specifically with the question of regulation of railways. The platform adopted refers to the fact that republican congresses enacted the act to regulate commerce and the measures supplementary thereto, and favors the creation of a federal trade commission, but it does not mention any further measures exclusively affecting railways as being needed. For a long period the railway question was prominently before the public, and was specifically dealt with in every party platform, state or national. The silence of this year's national republican platform seems to indicate that those who framed and adopted it think that the laws already on the statute books are sufficient for the present. It looks almost like a confession that regulation has been overdone, and it certainly must signify that the republican party believes that under existing conditions the imposition of further restrictions and burdens on the railways is inexpedient. Silence probably was maintained both because it was not desired to say anything that would sound like advocacy of a backward step, and because it was felt that to say anything that would sound otherwise would be considered as implying that the convention favored a more radical policy than that now being followed. Undoubtedly the petitions for conservatism presented by the Railway Business Association had a good influence. It should be borne in mind that while Mr. Taft was nominated by a faction, a large number of the delegates who were opposed to him voted for the platform adopted. While he received only 561 votes, the number by which the platform was adopted was 666, or nearly two-thirds of all the delegates, and there is no reason to doubt that the action—or non-action—taken reflected the sentiments of practically all of them. There seems reason to hope that the railway question will take a back seat and keep it throughout the national political campaign on which we are now entering.

IT is seldom that a shipper, or any one else, deliberately draws a check in favor of a railway for anything except his direct obligation. It is, therefore, refreshing to call attention to a unique case which recently occurred on a certain railway operating in the middle states. A grain shipper, with headquarters at Chicago, bought a carload of wheat to be shipped from western fields, consigned to himself at St. Louis. Through error on the part of the railway, the car was sent to Chicago, and the consignee was notified. The car was refused there, and it was consequently sent to St. Louis, where correct delivery was made. The railway had but one course to follow, for the expense of the extra haul was the fault of its own employees, and, naturally, it could not collect freight charges for a movement of this kind. Owing, however, to the unusual delay in making delivery of the wheat, the shipper found himself with an extra profit of some two cents a bushel, caused by an advance in the market price, and he mailed a check to an officer of the railway for the amount of this increase. The

officers of the road have not recovered yet from the shock the receipt of the check gave them. To find a shipper whose desire was to treat the railway as he would his most favored customer was as novel as it was gratifying. Now, to consider the equities of the case, suppose that, by reason of the delayed movement of this car of grain, the market price had receded, and the shipper had been obliged to pocket a loss on his sale. The railway would at once have accepted and paid, without protest, any clear, properly substantiated claim that might have been presented; for the difference between the price that the grain would have brought had the movement been without delay and what it actually sold for would have been a proper and legal basis for a claim. On the same principle ought not the railway to benefit by the profit that it made the shipper? But the shadow of "I. C. C." beclouds this weary land and the question arises: Can the railway in the case mentioned legally accept payment from the shipper in consideration of increased price received for the grain, when its contract consisted only of an agreement to haul the car of grain from A to B for a certain fixed charge, as provided for in duly published tariffs? It is true that, if the conditions were reversed, the railway would have paid the shipper's loss, but can the shipper pay the loss sustained by the railway because of the circuitous haul? At any rate, this little incident may indicate a significant change during the last few years in business morals and in the attitude of some shippers toward the railways.

DESPATCHERS ON STANDARD CODE REVISION.

THE report which the Train Despatchers' Association has made to the American Railway Association, suggesting changes in the Standard Code of train rules, is the most business-like and illuminating document on that subject which has appeared for many a day. We report the train despatchers' convention in this issue, but the discussion on these train rules was so long and so full that we have not the space for it. Every railway officer interested in perfecting the standard code should get the full report. The suggestions are based on actual experience and it is clear that they come from despatchers who see straight and who aim to waste no time on non-essentials. The *Railway Age Gazette* advocates the block system, and looks forward to the time when that shall be so perfected everywhere that the hair-splitting discussions which now constitute the life of train despatchers' meetings shall be done away with; but so long as "31" and "19," either or both, continue a vital part of our everyday life, the duty remains to perfect the system to the fullest practicable extent. And in this the despatchers, especially when—as in this case—they maintain a thoroughly intimate acquaintance with every feature of the freight conductor's work, must be considered a valuable, perhaps the most valuable, source of sound ideas.

As an example of the intelligent way in which the rules have been dealt with in this report we quote the following substitute for Rule 93, which is offered by the committee:

> Yard limits will be designated by ..... Within yard limits the main track may be used, clearing the time of ..... class trains as prescribed by rule. Other than ..... class trains must move within yard limits prepared to stop within half the distance the main track is seen or known to be clear.
>
> *Argument.*—The present rule is subject to confusion. In our judgment, no train should be permitted to protect against a first-class train, except in emergency, but not by rule provision. If such a train is late, they [switching trains] should be given time as per Form E. This suggested rule permits the use of main track upon the time of all except first-class trains without protection of flagman. Without such a provision, a yard limit affords no relief to trains having work to do.
>
> The provision in regard to half the distance the main track is seen or known to be clear seems necessary, in view of the possibility of two opposing trains or yard engines each moving "under control" (as defined) being unable to stop before colliding, while entirely able to do so within the "under control" distance.

A similar clarifying suggestion is made at the very beginning of the report where the committee offers a definition of the term "under control," and points out the inadequacy of the term "proceed with caution." Another definition proposed, which becomes necessary by reason of the general use of telephones, is "train order station." Discussing rule 14, it is suggested that the duration of a whistle sound should not be made variable. In connection with rule 27, it is suggested that red is an improper color for switch lights. With this color in use, trains at meeting points are constantly passing red signals. For rule 86 two forms are proposed; and the committee observes that in this rule a passenger extra, running on a telegraphic schedule, should be cleared by inferior trains the same as they would clear a regular passenger train. It is suggested that rule 91 should keep passenger trains ten minutes apart; and the unanswerable argument in favor of it is embodied in three lines—a five-minute interval is not sufficient to permit a flagman to get out the proper distance. We might go on at length quoting equally interesting paragraphs, especially concerning rules 207-212; but, as we have said, the subject can only be properly dealt with by reference to the full report of the committee. This report appears to have been made up mainly by Messrs. J. F. Mackie, R. C. Norton and J. E. Scott.

A PLAIN TALE OF NEWSPAPER MISREPRESENTATION.

A LETTER from a newspaper manager, published in our issue of May 24, page 1147, together with comment that it elicited from other newspaper writers, has given the *Railway Age Gazette* occasion recently to discuss the relations between the newspapers and the railways. We have remarked that while some railway men are not always as frank and veracious with the press as they might be, it is also true that some newspapers and newspaper writers deliberately misrepresent the railways. The purpose of this editorial is to tell a plain tale of a flagrant instance of this kind of newspaper misrepresentation.

The Railway Business Association is an organization composed exclusively of concerns engaged in the making and sale of railway supplies. Its membership includes many of the largest manufacturing concerns in America. Its members are, of course, all shippers. Therefore, whatever affects railways or shippers, or both, affects them. It was because they occupied a middle ground, which they felt afforded them a peculiar opportunity to bring about better relations between the carriers and the shippers, and to influence wisely the course of government regulation, that the supply concerns four years ago organized the Railway Business Association. Since that time the association has published and circulated eleven bulletins dealing with railway conditions and railway regulation. The eleventh was entitled, "Duty of Political Parties to the Shippers," and was an appeal to the republican and democratic national conventions to adopt planks in their platforms which, while countenancing no backward step in respect to public regulation, would advocate a policy that would tend to enable the railways to earn enough money to attract the capital which will be necessary to provide adequate facilities to handle the business of the shipping public. The bulletin contained quotations from 21 newspapers and magazines advocating the same policy for which the Railway Business Association appealed. It had a blank space in which shippers could sign a petition to the national conventions. It also gave a complete list of the names of its members.

This bulletin was sent broadcast to shippers, newspapers and commercial organizations throughout the United States. No effort was spared to secure the widest publicity for it. It was furnished to all of the newspapers in Chicago, including the *Chicago Tribune,* and it was received by the *Tribune* at the same time as by the other Chicago newspapers. On June 7 the *Chicago Evening Post* under large headlines printed extracts from the bulletin. On the morning of June 8 the *Chicago Record-Herald* gave it about a third of a column of space. The *Tribune* at that time did not mention it, but on June 17, on the eve of the republican convention, it published references to it under the following headlines: "Railway Lobbies in Conventions. Powerful Influences Seek Insertion of Planks in the Party Platforms. 'Secret Bulletin No. 11.' It Asks Aid of Shippers in Wielding

Influence Affecting Resolutions." Quotations from the bulletin were introduced as follows:

"New York, June 16.—(Special).—The active operations of a powerful lobby to influence the framing of planks favorable to the railways in the national platforms of the democratic and republican parties has been revealed here in secret 'Bulletin No. 11' of the Railway Business Association. The railways propose to operate by bringing to bear the influence of the shippers, and to this end the bulletin, which has been sent out to boards of trade and commercial organizations all over the country, contains a blank form to be signed by the executive of shippers and receiving concerns."

Farther down, the article said:

"Lest the shipper should fail to realize that it is to his interest to sign and forward the petition, the bulletin contains this significant paragraph with an implied threat: 'Whether the shippers of our country shall have adequate railway facilities depends entirely upon how wisely the delegates to the national conventions perform their duty in making their declaration of policy with reference to railways.'"

Who made this alleged "threat?" The quotation in which it appears is from an introductory statement in the bulletin signed by George A. Post, president of the Railway Business Association. Did the writer in the *Tribune* mean to imply that Mr. Post, himself a shipper and the president of an organization of shippers, and having no connection whatever with the railways, "threatened" himself and other shippers with a lack of sufficient facilities for transportation unless the conventions did what the shippers asked them to do? On the contrary, the obvious intent was to convey the impression that the alleged "threat" came from the railways.

First, then, the *Tribune's* article conveyed the impression that the alleged lobbies were composed of railway men, when, in fact, they were composed of railway supply men who are also shippers; second, it implied that the bulletin was issued by railway men, when, as a matter of fact, it was issued by railway supply men who are also shippers; third, it specifically asserted that the bulletin was secret, when it had been scattered broadcast over the country ten days before, and a copy had been sent to the *Tribune* itself *for publication;* fourth, it implied that the bulletin contained a "threat" made by the railways that the shippers would not be given adequate facilities unless the conventions adopted planks favorable to the railways, when, as a matter of fact, the language quoted was a plea by the shippers for action which would tend to enable the railways to furnish to the shippers adequate facilities.

In view of the facts which we have stated, it clearly was absolutely impossible that the writer of the article in question could have had any other purpose than that of deliberately misrepresenting the facts with the intent of placing the railways of the country in a false light before the public and thereby doing them injury; and the only effect of his action, so far as it had any effect, must have been to accomplish the only purpose which can be attributed to him. A few days after the article referred to was published the *Chicago Tribune* quoted at the head of several pages of one of its issues the commandment, "Thou shalt not steal." It had reference to the alleged theft of delegates by the Taft forces in the republican national convention. There are other commandments in the decalogue. One of them relates to the bearing of false witness. Is a thief so much worse than a liar?

The newspapers of the United States during recent years have been holding railway managers up to very high standards of public duty. The *Chicago Tribune,* a great newspaper in most ways, has been foremost in the denunciation of abuses in the transportation business. We raise once more the question of whether the furnishing of transportation to the public is of more importance than the furnishing of the information on which the public may base its decisions regarding the most important public questions. Can newspapers and newspaper writers justify themselves in insisting that railways shall not unfairly discriminate, shall not work their employees excessive hours, shall not issue watered securities, shall not earn excessive profits, and then turn around and deliberately and wilfully so distort the facts regarding them as to put them in a wholly false light before the public? Is not the railway situation serious enough now without newspapers resorting to falsifications that render it more serious? It is the fear of intelligent and thoughtful students of railway affairs that the nation is drifting toward government ownership of railways. To solve the railway problem in such a way as to escape that calamity is going to be hard enough at best; and no man but a fool or a knave will add to the complexity and difficulty of the situation by misrepresenting the roads to a public whose mind already is prejudiced and hostile.

NEW BOOKS.

Catalogue of Books on Railway Economics. Compiled by the Bureau of Railway Economics, Washington, D. C. Published by the University of Chicago Press, Chicago. Cloth. 7 in. x 10 in. 450 pages. Price, $3.28.

In this work the Bureau of Railway Economics has undertaken to list the works relating to the economics of railway transportation that are cataloged in 13 of the principal libraries of the country, together with those in its own collection. Except for material existing in these libraries, but not cataloged, and for the literature to be found in periodicals and collections of miscellaneous papers and general works containing railway material, and in some of the less important state and federal documents, the work can fairly lay claim to being a representative bibliography in the field of railway economics. The table of contents is very comprehensive and makes easy an almost instant reference to any subject or class of works that may be desired. The value of the work as a book of reference is also enhanced by a 25-page index of the names of all authors. The list of libraries containing the material recorded in the catalog is as follows: Bureau of Railway Economics, Columbia University, Hopkins Railway Library (Leland Stanford, Jr., University), Harvard University, Interstate Commerce Commission, John Crerar, Library of Congress, New York Public Library, University of Chicago, University of Illinois, University of Michigan, University of Pennsylvania, University of Wisconsin and Yale University.

Letters from an Old Railway Official, Series II: "To His Son, a General Manager." By Charles De Lano Hine. 232 pages, 5 in. x 7 in. McGraw-Hill Book Company, New York. Price, $2.00 net, postpaid.

Those who are fascinated and instructed by Major Hine's first series of letters—"Letters from an Old Railway Official to His Son, a Division Superintendent"—which were published some years ago, will expect to be both entertained and edified by this second series. Nor will they be disappointed. Written after their author has had a longer and more varied experience in railway service, and after he has given years of study and work, as special representative of the director of maintenance and operation, to the reorganization of the Harriman Lines upon the unit basis, it is an advance over the former series in point of vigorous, stimulating discussion of many of the serious problems confronting railway managers, and at the same time is brightened by the same flashes of wit and permeated by the same racy philosophy that makes its predecessor such good reading. A man who knows nothing about the railway business can read it with pleasure for its flavor, just as one who is not an expert wine taster can like good wine merely because he likes it. And those familiar with railway affairs may read it with even more pleasure and profit, both because of its flavor and because it is a valuable discussion of many railway questions by a railway expert. The problem of organization occupies the largest place in the book, but the discussions of it deal not merely with organization as such, but with organization in its bearing on all the internal workings and the external relations of the railway, and, therefore, bring into view the questions of the operating efficiency, of rates, of financial return, of wages and conditions of employment of labor, of labor unionism, of accounting and of public regulation. And there is no phase of the railway problem which is touched without being illuminated.

Letters to the Editor.

EQUIPPING OF OLD EQUIPMENT WITH SAFETY APPLIANCES.

Chicago, June 17, 1912.

To the Editor of the Railway Age Gazette:

In your daily edition of June 13, 1912, in the first editorial, page 1297, I note the following: "And, further, it is required that all cars passing through the shops for general repairs, whether of home or foreign roads, must be equipped with safety appliances."

The order of the Interstate Commerce Commission, dated March 13, 1911, extending the time within which equipment existing July 1, 1911, must be made to comply with the United States safety appliance standards, is not, I think, open to this construction. The order of the commission is clear and explicit as to the character of the work to be done upon the cars before it is absolutely essential to replace existing appliances with those called for under the standards.

I call this to your particular attention, inasmuch as a proposition was made at the time the extension of time was under consideration to incorporate the expression "general repairs" as indicating when the appliances should be placed upon the cars, and the expression was absolutely avoided when the commission formulated its order, for reasons which must be manifest. It is my thought that a wholly wrong impression may be given and an objectionable situation created if this particular idea is read into the order of the commission.

George Hodges,
Secretary, Special Committee on Relations of Railway Operation to Legislation.

PAVEMENTS FOR TEAM TRACKS.

New York, May 28, 1912.

To the Editor of the Railway Age Gazette:

Your editorial in the issue of May 24, on the above subject is timely, interesting and, in the main, sound. The matter is one to which railway officers do not seem to give the attention it merits, doubtless because they have so many other more important things pressing for consideration, and because the members of the engineering staff on railways are not usually specialists on street paving. In the majority of cases the proper pavement of team tracks and freight house driveways is inadequately or improperly provided for, while sometimes the opposite is true and a needless amount of money is spent to accomplish the purpose.

The conditions to be met are somewhat different from those of ordinary city streets. The travel is practically all slow; there is an unusual proportion of heavy loads, and stopping and starting of these heavy loads is very frequent. The teams stand for considerable periods in the same spot while loading and unloading and, in fly-time particularly, the stamping of the horses' feet is very severe on some pavements. The requirements at the different stations vary within wide limits from the simplest driveway along a side-track at a small country station to the receiving and delivery yards in the large cities, where an enormous tonnage is concentrated. The problem is to select for each situation the pavement that will best serve the purpose at the lowest cost for construction and maintenance.

The plain, old-fashioned macadam or gravel road, while low in first cost, as you say, unsuited for heavy work, and comparatively expensive to maintain. In well-drained railway yards it is particularly liable to the kind of distintegration called "raveling." Still, at many country and town stations it is, on the whole, the most satisfactory, particularly as its construction requires only ordinary care and skill.

You do not mention bituminous macadam (or bituminous concrete, pavements, and they seem to be very little used by the railways. Such a pavement, if properly built, using a standard asphaltic cement for binding material, ought to prove very satisfactory. It is comparatively low in first cost, furnishes good foothold for horses, its tractive resistance is low, and under anything but very heavy travel it should prove durable and easily maintained. It merits a more extensive trial. Nor do you mention sheet asphalt pavement, doubtless because for out-of-door yards, where it is exposed to the direct summer sun, its use is not advisable. It may become so soft and malleable that the standing horses and wheels of vehicles sink into and badly deform the surface. Under some conditions it may also be slippery. But for driveways under roof, where it is kept clean and dry and shielded from the direct rays of the sun, nothing is more satisfactory, and it is not expensive to construct or maintain.

Brick pavements for freight yards are to be advised with caution, principally because of the variability in the quality of the brick available. In the eastern and the central western states high-quality paving brick are not produced, and the long transportation of the recognized superior brands makes the pavement so expensive that the railways are tempted to use local brick, which often give very disappointing results. But in the central Mississippi valley where first-class paving brick are available at reasonable cost, a properly constructed brick pavement will, except under the heaviest and severest travel, give excellent service, and may be strongly recommended, especially as the first cost and the cost of maintenance are both comparatively low.

For use under the severe conditions usually found in the congested yards of large cities stone block pavement is the only kind that can be safely recommended. Within the region where it is considerably less expensive than granite, Medina sandstone pavement of first-rate quality has much in its favor. It gives a better foothold than granite, wears down to a smoother surface, costs less to construct, and is no more expensive to maintain. On the whole, however, granite-block pavement will doubtless continue to be the standard for the heaviest class of service.

Wood-block pavement has a number of strong points in its favor, but as ordinarily constructed it is much more slippery than any other variety in common use. It also costs more than brick pavement and has not shown itself to be more durable.

Hydraulic concrete pavements have not been sufficiently tried in freight yards to be safely recommended. The constant stamping of sharp-shod standing horses might rapidly disintegrate the material.

Whatever the kind of pavement chosen, good construction is as important as the material. A good foundation for the wearing surface is very essential. For all kinds except the ordinary macadam, a hydraulic concrete foundation is best, and, in the end, cheapest. But the thickness and quality of the concrete may be varied according to the solidity of the sub-foundation and the severity of the expected service. For city yards it should not be less than 6 in. thick, but where the travel is not especially heavy and the sub-foundation is good, a thickness of 4 in. will be ample. It is seldom necessary to use a rich concrete such as that considered standard for culverts, piers and retaining walls. A well made 1:4:9 concrete will often be good enough. Six inches of such concrete will give more bearing strength on a road than 12 in. of broken stone, and will prove to be considerably cheaper.

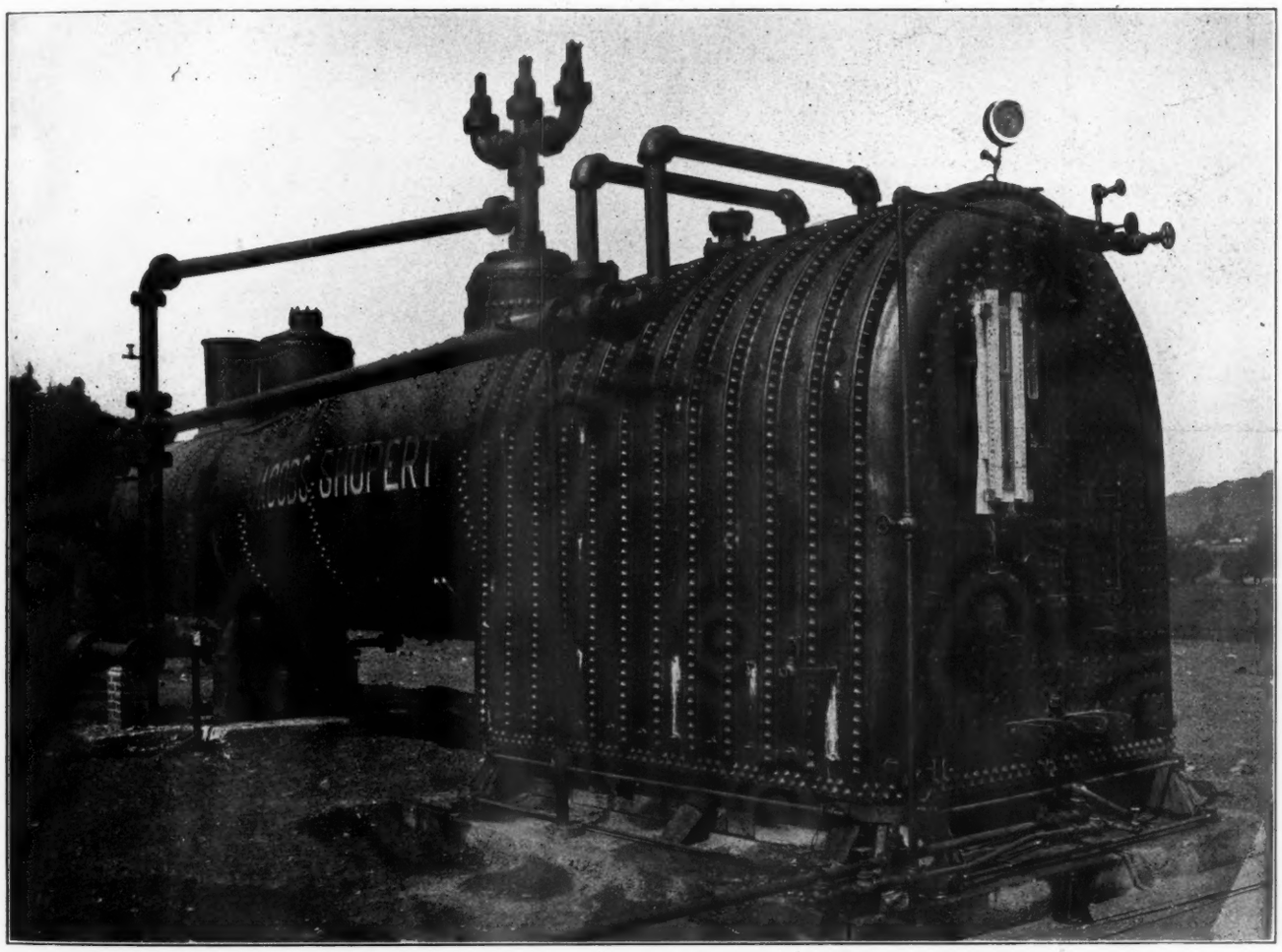
The joints between the blocks of brick or stone pavements should preferably be filled with Portland cement grout, made of one cement to two and a half sand. This is not only cheaper than pitch or other bituminous filling, but it makes a stronger and smoother pavement, without materially decreasing the foothold for horses.

S. Whinery,
Consulting Engineer.

LOW WATER LOCOMOTIVE BOILER TESTS.

Radial Stay Type Fails; the Jacobs-Shupert Is Not Affected Except for the Overheating of the Firebox Sheets.

The long series of competitive tests between boilers of the Jacobs-Shupert and the radial stay types, which have been conducted at Coatesville, Pa., under the direction of Dr. W. F. M. Goss, of the University of Illinois, were concluded on the afternoon of Friday, June 20, in the collapse of the radial stay firebox. The regular series of evaporation and other tests had been conducted in a temporary shed near the buildings and on the property of the Lukens Iron & Steel Company, and, these concluded, the boilers were moved to a cinder dump about a half mile west of the works. Here they were carefully set up on concrete foundations and fully fitted with all of the necessary steam gages, safety valves and blow-off cocks, but without the usual boiler lagging. They were arranged for oil burning, and for two weeks had been subjected to a constant series of preliminary runs, in order to make sure that there should be no hitch on the final day.



Jacobs-Shupert Boiler After the Test at Coatesville, Pa.

The tests simply consisted of starting the fire with the water at the proper height above the crown-sheet and then allowing the water to fall until something happened—that something being expected to be the failure of the crown-sheet.

The site chosen for the work was ideal. The cinder dump extends as a long and high fill along one side of the valley with no buildings of any kind within a quarter of a mile, and it runs in a general easterly and westerly direction. A stream supplying water for Coatesville flows along the foot of the northerly slope of the dump, while on the north the hills are wooded and rise with a gentle slope to a height of a few hundred feet above it. At the point selected for the tests the dump is leveled to a plateau about two hundred feet wide, while to the southeast of it is an open field rising with a gentle slope. In the southeast corner of this field a grand stand was erected, from every seat of which a clear view could be obtained of both boilers and of the bomb-proof, or fort, for the official observers and directors of the test. Somewhat to the west and about 200 ft. nearer the seat of action was a small platform and shelter on which one of the Pathé Frêres photographers was stationed for the purpose of taking moving pictures of the scene below. The grand stand had a seating capacity of about 300, and was filled with men and women, while from 150 to 200 more were scattered over the slope in the neighborhood; if anyone failed to have a perfect view of the whole proceedings the fault lay in themselves and not in the arrangements and surroundings. The whole area of what was considered the danger zone was guarded by a cordon of police, and back of and outside of it the hills were dotted in every direction with interested spectators. The field occupied by the grand stand was reserved for the invited guests of the Jacobs-Shupert Firebox Company.

The day was an ideal one for the work. The temperature was in the seventies, there was a pleasant breeze blowing from

the west and there were just enough of clouds in the sky to make it a typical day of June. Dr. Goss and his assistants were on the ground early in the morning, and the guests began to arrive at about noon, some coming from Parkesburg, where they had visited the mills in the morning, and the others from Philadelphia. The last contingent reached Coatesville at 12.48 p. m., and were met at the station by carriages and automobiles in which they were carried to the gates of the Lukens works. From this point they were taken to the observation stand on the ingot cars of the steel company; these had been fitted with flooring and seats for the occasion, the hauling being done by the works' locomotives over the narrow gage industrial railway. On arrival the guests were served with luncheon in a tent erected next to the observation stand; while eating they had full opportunity to overlook and familiarize themselves with the field of operations below. Among the guests were representatives of railways from all sections of the country.

Flash Light Taken from the Lower Left Corner of the Door Sheet of the Jacobs-Shupert Firebox, Showing the Brick Arch Intact and the Discoloration of the Sheets Due to Overheating.

ARRANGEMENT OF BOILERS AND APPARATUS.

Both boilers were under steam, the safety valves of the Jacobs-Shupert blowing vigorously. The boilers were set facing the southwest and at a slight angle with each other. This put their firebox ends at an angle of about 45 degs. with the line of vision of the observers on the grand stand. This was so that in case of a violent failure and a throwing of the mass, due to the collapse of the firebox, the movement would be away from the spectators. The boilers were about 800 ft. from the guests who, with the exception of the official observers, were the nearest to the scene of action.

The official observers were stationed in a bomb-proof or fort erected directly back of the boilers and about 250 ft. away. It was formed of a Jacobs-Shupert firebox laid upon its side with the roof sheet turned towards the boilers and protected on that side by a cribbing of ties with a cinder filling. Immediately back of this was a platform on which the observers could stand and look over the top of the bomb proof towards the boilers. On top of it were two telescopes which were used for reading the steam gages and water glasses. Of the latter each boiler was fitted with two of such a length that the combination made it possible to read the water level from a height of about 6 in. above the crown-sheet to 25 in. below it. Leading to the boiler were the pipes for conveying the oil to the firebox and two wires for manipulating the blower valve for regulating the amount of steam admitted to the stack for maintaining the draft. There were three safety valves on the boiler, the first set to open at 220 lbs., and the other two at three and five pounds above it. The boiler feed water was delivered by a pump supplied with steam by a donkey boiler, both of which were placed on the bank of the stream at the foot of the dump.

Back of the platform of the official observers was a cribwork of ties on which the feed tank for the oil burners was located.

This fed the oil to the burners by gravity, and the amount delivered could be regulated by the observers. This tank was itself fed by a pump taking its supply from a small tank car set still farther back.

To the rear of the platform and in front of the tank were two indicators that were manipulated by the official observers. The lower one was a large white board on which was drawn a sectional outline of the inner and outer sheets of the firebox. Below the the crown-sheet line were figures indicating various distances below its highest point, at 2-in. intervals up to 36 in. Across the face of the indicator a horizontal black rod was placed to be moved downward with the fall of the water level in the boilers. Above this was a circular indicator provided with a single hand that could be turned to indicate the boiler pressure, which was indicated by figures near the outer edge and which ran from 150 to 240 lbs.

To complete the arrangements telephonic communication was established between the bomb-proof and the grand stand, with an assistant at the latter point who stood throughout the whole test with the receiver at his ear and with a megaphone in his hand, through which he announced the readings of the observers as to pressure and water level as they were sent to him. Incidentally, it is interesting to note that though this assistant had a good, loud, well-carrying voice, the roar of steam at the safety valves and at the stack was such that he could not be heard at the farther end of the stand.

Radial Stay Boiler Shortly After the Failure of the Crown Sheet.

THE JACOBS-SHUPERT TEST.

As already stated, the boilers were under steam and the safety valves were blowing vigorously when the last guests arrived, and shortly after half-past one the attendants retired from the neighborhood of the boilers, the fire beneath the radial stay boiler was put out and its valves ceased to blow, while those of the other were in full blast. At 1:48 the announcement was made that the test of the Jacobs-Shupert boiler had begun. At that moment the steam pressure was 225 lbs. and the water stood at about 6 in. above the crown-sheet. Slowly the water level rod was lowered, and in about ten minutes it was announced that the top of the crown-sheet was bare. Then came the speculation as to when the collapse would occur, with an average consensus of opinion that about 8 in. would be the place. The steam pressure held with some variations, rising and falling between 220 and 225 with the continued dropping of the water level. The safety valves were blowing, sometimes one, usually two, occasionally three, and the long, white swift column of steam rose nearly straight in the air and was in a strong contrast with the green of the hills beyond.

Down came the level of the rod, 10, 11, 12, 13 in., and then the white mist began to fade; there were intervals with nothing immediately above the safety valves and only a white cloud above. Evidently superheating of the steam had set in. Then the pressure lagged, one valve blowing became the rule, and slowly the column of escaping steam disappeared, and finally it was gone, though the roar of the superheated steam through the valve was still clear and distinct. Then the decreasing heating surface showed its effect on the pressure and it began to fall. The pop valves closed and there was nothing but the noise of the exhaust and the increasing volume of black smoke from the stack to mark the progress of the test. This did not occur, however, until the water was well below the crown-sheet.

But down came the rod through the teens until the safety valves closed somewhere about 20 in. Then the pressure fell rapidly, and when it was announced that the water had disappeared from the gage glass at 25 in. below the crown-sheet and that no further readings could be made the pressure was at 190. Then there was nothing to do but wait. The full stream of oil was still flowing to the boiler, but with the rapidly falling pressure and the weakening blast, combustion was becoming more and more incomplete and black smoke of increasing volumes was pouring from the stack. Down came the pressure until it finally reached 50 lbs. per sq. in., when the faint blast stopped, the smoke cleared away and the precentor at the megaphone announced from Dr. Goss that the test was discontinued because the small amount of water remaining did not evaporate sufficiently fast to supply the draft necessary to maintain the fire. This was at 2:43, or 55 minutes after the test was started.

Aside from the overheating the injury to the Jacobs-Shupert box was slight and consisted of comparatively insignificant distortion of the inner sheets, the details of which will be made public with Dr. Goss' official report. The brick arch and the arch tubes were not disturbed, although the rear ends of the arch tubes were a considerable distance above the water level at the close of the test.

TEST OF RADIAL STAY BOILER.

At once the fires were started under the radial stay boiler. The pressure which had fallen was quickly raised, and at 3:35 p. m., with all three valves blowing under a pressure of 225 lbs. and with 5 in. of water over the crown-sheet, the test of

the radial stay boiler was announced to have started. Again it took about ten minutes to bare the crown-sheet, and again the maximum steam pressure was held, rising from 225 to 230 lbs. per sq. in. The water level fell minute by minute and inch by inch until at about 3:50, with the water at 6 in. below the crown-sheet, there were signs of distress at the staybolts in the outer sheet. Streams of steam were seen issuing from a number of them. Then the girth seam between the throat sheet and the shell developed a leak, and as the water level fell the staybolt leakages came down with it. They were small, and not more than may often be seen. Still down came the level, with no change at the safety valves, through 10, 11, 12, 12½, 13 in. below the crown-sheet, until just as the percentor had announced 14¼ in. at 3:58 there was a puff of black smoke out from the right hand side of the foundation that curled around back of the firebox, to be followed by a blast of black smoke from the left, a dull roar, a cloud of smoke and flying debris and the disappearance of the boiler and all of that part of the field while the cloud swept out to the left and right for about 150 ft. and up for a similar distance. Evidently something had happened this time.

In a minute the smoke and steam cleared away and there stood the boiler. It had been lifted from its foundation and moved ahead and to one side about 18 in. The brickwork of the foundation and the arch was scattered hot and glowing for 50 ft. in all directions.

Examination showed that the crown-sheet had come down in a sag for a distance of about 18 in., but had not split or cracked. The staybolts had merely either pulled out of the sheet or had been broken off at the head. There were 72 radial hammer-headed staybolts pulled; 81 button-headed stays and 21 T-bar bolts. The main damage was on the right side, beginning at about the second row of T-bars and running back 14 rows. Apparently one of the hammered head stays was the first to yield; this allowed the sheet to drop and the heads of the other bolts were simply jerked off.

As for the method of conducting the test, the rate of evaporation of the two boilers was apparently about the same throughout, and started at about 12 lbs. per sq. ft. of heating surface per hour. The boilers had been carefully calibrated as to capacity so that accurate records of what was done could be kept and will be available later.

Flash Light Taken from the Lower Left Corner of the Door Sheet of the Radial Stay Boiler After the Failure of the Crown Sheet.

The main line from Lourenco Marques, Portuguese East Africa, to the Transvaal border is only 55 miles long; nevertheless, it has an enormous traffic, both passenger and freight. To Johannesburg alone imports to the value of over $30,000,000 pass over this route. Lourenco Marques is not only a direct gateway to the Transvaal, but is also the chief center from which laborers are drawn for the gold fields.

The latest railway to be inaugurated in Chile is a line between Curico and Hualane, 39 miles. This line, which is of the 3-ft. 1-in. gage, has two large bridges. The Teno bridge is 310 yds. long and the Rauco bridge is 130 yds. long. There are several smaller bridges and a viaduct 50 yds. long and 30 ft. high. The contractors completed the line six months before the date arranged and earned a government bonus of $50,000.

REASONABLE REGULATION OF RAILWAY RATES.*

Commerce Built Up by Rate-Making on Business Principles—Danger of Tendency to Base Tariffs on Cost.

BY MORRELL W. GAINES.

Federal supervision of rates, in its present period of enforcement, began gently and has grown, step by step, more searching and more stringent. Rate laws, advancing from the salutary to the questionable, are typical of the wider movement towards regulation, in which the states have gone farther than the federal government. On all sides local commissions have been established with sweeping powers over capitalization, operation, and, more fundamentally, the rates of railways.

For the struggle to preserve their freedom the railways were desperately handicapped. In the main they were honestly managed. But their former offenses against fair play, in the practice of personal rebates and in certain conspicuous instances of over-capitalization, were dragged into public view. They could not enter the contest with clean hands, and they have accordingly bent, perforce, before a storm of attacks which they should, by rights, have resisted to the utmost. Innumerable enactments invest commissions with powers stripped from railways. The steps of the latter have been hedged about, their freedom of initiative curtailed, their rights infringed, their revenues diminished, and their taxes and expenses increased. Their future is clouded with dispute.

Now the courts are busied with the task of sorting from this feverish legislation the things that are Cæsar's and the things that are not. Some of this legislation has been swept away, and from the very nature of its origin much more will be. Decision and enactment will finally determine the legal metes and bounds of regulation. In the end a new state of equilibrium will result under which railways can certainly exist, but as certainly under altered conditions of growth and earning power.

Traffic, in the old use of the word, signifies exchange of goods with a view to gain. As applied to railways, traffic has acquired a narrower meaning, the movement of goods without exchange. So railway traffic has come to be thought of as a thing apart from trade. Indeed, the general concept of freight rates is that they are a burden on commerce, a charge on the profit of merchant and manufacturer. Nevertheless, even in the narrower interpretation, railway traffic remains of the very essence of the exchanges of commerce. All of it, without exception, moves from seller to purchaser or, if the conditions are more complex, then from the seller towards the purchaser. The force behind each shipment is profit in exchange. Railways live by serving trade, and their deeper interests are the same as those of the commerce they haul.

Community of interest between railways and railway-borne commerce is dependent on simple and well-known relations of financial factors. Railways and trade complement each other in their activities, so that under free play of natural and selfish forces each is the stimulus and support of the other. This is the argument for securing to the railways freedom of rate-making. It is as valid and of as deep influence on the public welfare as the wise reasoning that has left trade itself between the states free and untrammelled.

Railways and industries alike are operated for profit. But they must seek profit by different paths. The railway sells its one commodity, transportation, at a thousand prices. Rates for coal, lumber, hay, grain, cattle, cotton, hardware, and the numberless manufactures differ according to the article transported. Rates for the same article transported the same distance are unlike in different places. Increase of distance brings no equal advance of rate, even where there is no competition of intersecting routes. Where there is such competition a longer haul frequently carries a lower rate. If there be a cost basis for rates, it is clear that it has been ignored throughout the rate structure. The reason is that, for profits railways must consult tonnage rather than costs. Traffic that may be carried only by making special rates lower than the originally established tariff, is offered for transportation. If it will yield a margin above its direct cost of haul, that margin is profit. So railway tariffs have been differentiated by long process of evolution from the simple tariff of 1801, of the Surrey Iron Railway, cited by Acworth, which named but four rates, and was itself an evolution from a single rate canal-toll tariff. The complexity of present tariffs is the result of 80 years of adapting rates to the multifarious requirements of trade, in order to secure tonnage and profits that would otherwise be unobtainable. Costs, within wide limits, have been ignored, save when rates touch closely the lower barrier of direct costs. The aim of the railways has been to keep the average of all rates high enough to cover the whole of the three divisions of their outgo, and to adjust the individual rate at any point above the direct costs which will secure a maximum tonnage from the traffic to which the rate applies.

Industries have a thousand commodities to sell; but, within narrow limits, must offer each commodity at a fixed price. To make profits, their prime need is for a market wide enough to absorb their product at whatever price will more than cover the cost. The wider the market the faster and surer their growth. Railways have brought markets within reach and are responsible for the growth of trade and manufacture. But the railway rate that stands between a rigid cost on the one side and a rigid price on the other must itself be flexible. Trade arises and traffic moves only when the railway rate plus the cost of production is less than the price at the market by a margin of profit sufficient to sustain and develop the business. The railway rate designed to produce tonnage is the rate that satisfies the need of trade to be market-free. Each locality, at once producing center and market, has its own scale of cost for its products and of prices that it can pay for what it buys. Hence arises the need of commerce for infinitely various, profoundly sympathetic schedules of rates and classifications that will "move the business" between localities. Hitherto, in this country, railways have been constructed to carry commerce, and their rates have been established to create it.

Rates must put a profit into the pocket of the shipper in order that traffic may move. They must leave a profit in the hands of the railway in order that the railway may live. Up to the present there has been a system of rates based on mutual profits, and not on costs, distances, or any other extra-commercial factor pertaining to the railway alone. The chief service of this system to the general growth of wealth lies in its promotion of what is known as market competition. This is a competition of traffic and not of routes. Wares from two or more producing points, unequally distant, are, through adjustment of rates, laid side by side in the same market. Except where hauls are too costly, all producers are placed in a position to compete. Equal opportunity the railways cannot create, but in the desire for tonnage, they create everywhere such opportunity as they can. The effect is to raise prices to the more outlying producer by increasing his demand, and to lower them to the common market by increasing supply. Area of production and volume of trade are increased. The average railway rate is lowered. The

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average rate of profit is also lowered. The consumer pays less. The net result is altogether in the spirit of modern industry, which develops wealth by augmenting volume of business and reducing margins of profit.

Market competition exists everywhere. It is characteristic of every form of trade except monopoly. The rates for market competition are set by the railway's cutting into its own margin of profit until it meets the margin of profit of the producer. They need no regulation except that furnished by the desire for tonnage. Natural resources have been developed by rates named to meet market competition. The granary of the western prairies was thrown open to commerce not so much by the extension of lines as by the low rates that put wheat into Chicago, New York and Liverpool on the basis of maintaining a livelihood for the farmers. On the basis of giving a profit to the West Virginia operator, West Virginia coal, with its long haul to tidewater, was opened up by rates that would place it in New England furnaces in competition with the nearer coals of Pennsylvania and Maryland. Lumber of Washington and Oregon is hauled a thousand miles farther across the continent than is the lumber of the south with which it competes; the rates named are such as to start the mills and keep them going. Fruit from California meets in New York on equal footing the product of Florida and the Mediterranean. The rates named have turned the desert into a garden. New England factories, market-towns of the west and south, manufacturing cities of trunk-line territory, the export tonnage of the great seaports—all are sustained and nourished by special rates based on market competition.

Next to market competition in point of service comes the competition with other routes. Clipper ships, whose extinction the Interstate Commerce Commission has lately mourned, would still bear the attenuated commerce of California and the Orient around the Horn, if it were not for the flexibility of rates, by means of which railways give the traffic their fostering care. So the low rates and the quick facilities in any competition of routes promote the exchanges of trade. Where there is neither competition of route nor competition of traffic the railways are still of service. There is here the slower but no less potent competition of standards of living. Population must be attracted and territory developed if tonnage is to result. Rates may be higher than against the sharper, more direct competition, but they must still be based on the necessity of bringing a profit to the producer.

If instead of the inequalities of the profit-making system of rates we had had hitherto a leveled-down system, based on cost of service, fair return on capital, distance, or any other equalizing factor, we should have had, in the first place, a much smaller development of railway traffic, and in the second, a much smaller development of railways. Had they been debarred from seeking any and all obtainable tonnage, the lines built would have been perhaps half of the existing mileage, and would have comprised only the most advantageously situated routes. Traffic carried would have been less than half the present volume, because all those activities that have been called into life by favoring rates would be lying dormant. The trade and the wealth of the country would be immeasurably less than they have grown to be. This is the justification of the irregular and unregulated rate system which has evolved and been evolved by the railways and their traffic.

The law does not direct the Interstate Commerce Commission to seek and apply rates which will promote commerce. The law is aimed, first, against discriminatory rates, and, second, against unreasonable rates. To that end it instructs the commission to decide what is a reasonable rate, in the cases that come before it, but omits to prescribe the standard by which reasonableness is to be established. There is, and can be, no such standard. Rates are simply committed to the judgment of the commission. That body has used from time to time, as aids to judgment, but not as standards, cost of service, value of service, distance, natural advantages of localities, consideration of local interests, competitive conditions, and fair return on capital. Except that competition sometimes determines a rate definitely, none of these factors can be of exact application. Furthermore, they often conflict. The commission has used now one and now another as the preponderating influence in its deliberations. At first it emphasized value of service, until it became evident that the term, whatever else it might be, was not a unit of measure. More recently it has given prominence to cost, and to fair return, taking the latter in the sense of including moderate capital charges in cost. However, no matter what the factors taken, the decision can be no more than an arbitrary ruling as to what constitutes a reasonable rate. Reasonableness cannot be deduced from the factors, singly or together.

Rates imposed by authority on other than commercial considerations could hardly be expected, at best, to give automatic obedience to commercial needs. Moreover, the actual determination of rates is poorly handled, sometimes with impracticable results. There are no traffic men on the commission. The ground to be covered is so vast that labors must be simplified by the adoption of short cuts, such as that furnished by comparison of rates. Furthermore, the commission wishes to suppress market competition as a basis for rates, and to establish instead "some system of rates which on the whole seems just and reasonable. . . . Different communities should be permitted to do whatever business they can under that rate system." It declares that market competition is but a euphemism for railway policy. To quote from the last annual report: "It will be found that this thing called market competition rests in all cases in the mind of the traffic manager. It is the expression of a desire to obtain business which otherwise would not be obtainable." Market competition will be considered, but not as market competition. It will be allowed where compelled by other railways, but not where railways create it for the benefit of their own shippers, and in either event it is not a matter to be left to their own discretion. "The commission has never yet decided that this form of competition alone would justify a departure from the fourth section" (the long-and-short-haul clause). So the rates of the commission are both arbitrary and hasty, and based on faulty principle. It is by chance only that any of them may promote, and not destroy, the growth of wealth.

A wide application of the principle of comparison of unrelated rates, with concomitant destruction of market competition, is to be found in the Spokane and intermountain decisions. These are among the most important of the recent rate decrees of the Interstate Commerce Commission. In them the commission attempts to arrogate to itself the power to fix rates absolutely, a very different matter from the power to name a maximum permissive rate conferred on it in the terms of the law. These decisions, handed down June 22, 1911, have served as text for a general order prohibiting departures from the long-and-short haul clause, and prescribing rectification, until such time as the commission may be able to hold hearings and issue permits for reasonable departures. Furthermore, they have been enjoined by the Commerce Court and the injunction is under appeal by the commission to the Supreme Court. The rate-making power, particularly with reference to market competition, is in issue and the case will have bearing on the whole future course of regulation.

The question was one of commerce and not of rates. Yet it had to be argued, considered, and decided on the barren basis of "reasonableness" and discrimination. The complaint arose because the most westerly of the interior cities, Spokane, Reno, Phoenix, Salt Lake, and other points, desired to take away from the coast cities, Seattle, Portland, and San Francisco, the local distributing trade in manufactured products brought from the east. The interior towns wish to become wholesaling centers for a larger tributary territory. The coast cities want

to hold the trade of the interior to the extent that they have always had it. One group asks for lower rates from the east; the other has retaliated by asking lower rates from the west. The quarrel over trade privileges is of long standing. It has been urged for more than twenty years.

No considerations of tonnage or of competition dictated the rates to intermediate points in the west, this side of the Sierras and the Cascades. The small communities of that region had neither choice of routes nor, at that time, an appreciable volume of traffic. The fact that through rates were low was all the more reason for keeping these rates full, so that the average rate on all traffic might cover all three classes of railway expense. Low rates everywhere would bankrupt the railways, barely covering movement expenses and maintenance. Full rates everywhere would also bankrupt them, shutting off the through tonnage that they wrest from the sea, which carries a share of their burden of operation. To live they must have a dual system of high and low rates; and they are still under the necessity of keeping their intermediate business untouched by the forced level of water competition. The high rates are not, however, a burden on intermountain traffic for the benefit of through traffic. The intermountain cities, on the contrary, are the chief beneficiaries of both high rates and low rates. The coast would always have had low rates by sea, without the transcontinentals. But the interior, if rates had been leveled, would still have nothing but the wagon haul of the pre-railway era.

The rate system followed has been to carry the full charge on intermediate traffic as far west as possible, and then to protect it against back haul at a lower cost by making extremely high rates from the coast inland. Thus the rate plateau rises slowly from its eastern origin until near the Pacific, where it breaks away to the low level of tide water. The system is eminently rational, in spite of the incidental waste of train-miles in back haul where the plateau breaks. The rates are, nevertheless, hardly "reasonable" in the regulatory sense. The impact of Interstate Commerce Commission ideas upon this situation could not fail to work havoc.

The opinion of the commission on these rate cases contains, first, a discursive discussion, and, last, an announcement of the rate order. There is no necessary or apparent connection between the two. The order itself is not supported by reasoning, nor is it a logical deduction from the facts presented. Either the commission conceives of its regulatory power as absolute, needing only an arbitrary enunciation, or it perceives that to support a decreed rate by the inferential and loose arguments of "reasonableness" would only expose it to successful attack in the courts. Each of its three orders on this rate situation lays down a different set of "reasonable" rates. Each order is arbitrary, and each is arbitrarily different from the other two.

Costs are mentioned as among the considerations to which thought has been given, but the reduction of rates finally arrived at is explicitly not based on costs alone. Detailed cost figures, quoted in an appendix, purport to prove that the Southern Pacific had made exorbitant and discriminatory profits on its Reno traffic. The figures so quoted in prejudice of the case for the railways do not apply. They are for the average traffic, which consists largely of long-haul freight moving in full trainloads with the utmost economy both of road and of terminal expenses. The westbound transcontinental traffic set off at Reno averages about two cars per day. To leave these cars, through trains must be broken up, or, at greater expense, the cars must be hauled in by lightly-loaded way trains. Car loading with such small traffic is certain to be light, and return loading is irregular. The agent's salary and other local expenses mount high when levied on so few cars. Reno traffic is necessarily expensive, and not fairly to be compared as to costs with through freight.

The exorbitant profits are not proven. A rate of three cents per ton-mile is high as railway rates go, and if matched against the average cost the resultant net earnings appear excessive. But this rate is not, in and of itself, high for the haul of special tonnage of this volume across the Nevada desert. Independent lines in that region charge more. In January of this year, the Interstate Commerce Commission itself decided that the Nevada-California-Oregon Railway, leading north from Reno, was entitled to charge four cents and upwards on a volume of business several times as large.

The financial position of the carriers was considered in a one-sided fashion. A test of reduced rates had been carried out under the last preceding order of the commission, and it was found that while losses resulted the railways could carry them. Therefore it appeared that there was no confiscation of property. The commission fortified this position by declaring the general profits of the transcontinentals to have been excessive. The thirty years of struggle and the approaching contest with the Panama canal were forgotten in view of the present period of substantial earnings. Shortly after the decision was made, the St. Paul, a powerful system whose stock has been a standard investment, was obliged to cut its dividend, and the Denver & Rio Grande, borne down by the burden of the Western Pacific, which is earning nothing against its charges, passed its dividend completely. The dividend rate of three other lines out of the seven has been called in question in the markets of the last eight months. There is no question but that the transcontinentals are, as a class, fairly prosperous, but they need their prosperity as reserve strength for the immediate future. There is here no good reason for saddling them with an instant loss estimated from $6,000,000 to $12,000,000 a year on all the traffic affected by the order.

The losses proposed were not confined to the railways most directly concerned. The mantle of sacrifice would fall on eastern lines as well. More than that, commerce, for whose benefit the rate reductions were ordered, would be disturbed and confronted with loss. The final decision, now under injunction, is in substance as follows: the railways are permitted to charge as much to intermountain points as to the coast on commodities originating at St. Paul, Kansas City, Omaha, and Missouri river cities; 107 per cent. as much from Chicago; 115 per cent. from Buffalo and Pittsburgh; and 125 per cent. from New York and the Atlantic seaboard. These rates are relative and not specific. They lean on the through rate. They represent the permissive maxima; any railway may go lower at its option. The intent was not only to reduce the intermountain rates but to create distance differentials that would destroy in this territory market competition between the cities of the east.

The Commerce Court did not pass adverse judgment on the general rate-making powers of the Interstate Commerce Commission. It holds authority under the same general law. Its injunction was issued on entirely different grounds: first, that railways have the right to make low through rates against water competition without reference to their intermediate rates; second, that percentages of such through rates (which may themselves be raised or lowered) are not rates at all, and particularly not the "reasonable" rates which the commission is empowered to impose. Any change in through rates would destroy the reasonableness of the intermediate rates. Moreover, the relations set up between the eastern cities are untenable and impracticable. The percentages established would be self-nugatory before they were ever put into effect. "The practical effect of the order is either to compel a blanket rate from the entire east to the entire west, or to prevent the carriers from getting all the business which they now secure without loss by making rates which enable merchants to meet market competition." The court illustrates this conclusion by showing that roads leading from New York would have to reduce their permissive 125 per cent. Spokane rates to the 100 per cent. established from St. Paul, Minn., or abandon the

traffic. Desiring their proper share of tonnage, all railways would reduce to the 100 per cent. from all points east of the Mississippi to all points in the west.

The court might well have gone further and barred the percentages on the ground that they involved in principle the fixing of rates absolutely, a power as yet withheld from the commission by its enabling law. For if the commission can say that the rate from New York to Spokane shall be no more than 125 per cent. of the rate from New York to Seattle, it can with equal right go on to say that the rate from New York to Seattle shall be no more than 80 per cent. of the rate from New York to Spokane. Furthermore, in order to carry into effect the percentages of its decision and abate the market competition of the eastern cities, it will have to do just that and add to its present order the converse percentages from each locality. Thereafter the intermountain and the through rates will be interlocked so that none can change unless all change. Practically speaking, these rates would then be immovable, fixed by order of the commission. Thus the right to establish percentages puts the entire rate structure within the iron grasp of regulation. An important element of the vast power conferred by percentages is that the method is so facile, so adapted to broad strokes, that the commission could multiply its decisions and divide its labors, quickly overrunning the rate complexities of the whole country.

The decision aims to reverse the currents of traffic. It favors the interior at the expense of the coasts. Intermountain towns are to buy from the east direct what they have previously received from the Pacific ports. Shipments from the east are expected to proceed from the nearer cities instead of from the more distant, whose rates are made higher. Existing trade will be stopped and new trade established instead. Such a decision would be questionable under any circumstances, but it is demonstrably unprofitable to trade as well as to railways when made in the face of the opening of the Panama canal. As matters stand, the decision can hardly go into effect more than a few months before the canal is in operation. It would, if of immediate acceptance, have had a bare two years to run. Through rates will be fixed by the canal at a level to be estimated at perhaps half of the present low rail charges. The force of this competition will necessarily avail to give the two coasts the advantage over the interior. Spokane and Reno must then be served from the west and not from the east, and the flow of traffic set up by the commission will again be reversed. San Francisco and Seattle will not only take back the jobibng business now wrested from them, but will extend their domination farther inland. It is an ephemeral trade that the commission confers on the intermediate towns. New capital cannot be employed in it safely or profitably. If employed, it will have to cover itself as best it may by exorbitant charges to the consumer. Existing capital in the established trade of the coast points faces temporary idleness and loss. As a practical matter reversal of trade currents would hardly be entered on for so short a period. The commission's order, if enforced, will be self-nugatory with respect to trade as well as to percentages, and its net effect will be temporary sacrifice by merchants of the coast, and heavy loss to the railways.

The railways never had greater need of their dual standard of high and low rates than now as they stand facing new water competition. The canal will contend directly with the seven transcontinentals for traffic that yields, on a conservative estimate, at least ten per cent. of their combined gross earnings. If their intermediate rates also are to bear a percentage relation to the rates they must make against this competition, their total of losses will be greater than they can endure. The present order of the commission, or any future order of the same aim, will force the transcontinentals to abandon their through business altogether, turn it over to the sea, and give not only the intermountain territory but all the region as far east as Denver a haul to and from the Pacific. The decision of the commission is directly against the logic of events. It is not illumined by the light of reason.

The universal indictment against commissions is that they are lacking in that trained understanding of traffic matters by which alone they could fix beneficial rates. The indictment against the whole regulatory system is that it imposes an impossible task upon human intelligence in committing so vast a supervision to so few men; that it also makes the labors of rate determination destructive and misspent by framing the instrument in hostility to what exists. It is a question whether, under any circumstances, bodies of combined legislative, administrative, and judicial powers can take that moderate view of their own functions which will lead them to develop and not reverse the orderly and fruitful progress of rate evolution.

Regulatory commissions are created as a guard against selfishness. The money-selfishness against which they are aimed is at least guided by fructifying self-interest. The power-selfishness with which commissions are steeped leads to no end but futility and self-aggrandizement. Reasonable regulation should be confined to extension of the police function of the government. It should guarantee safety and stability, and guard against dishonesty, whether in promotion, in accounting, or in favoritism. It should leave the administration of railways alone.

Surveys have been completed for the railway from Yunnan, China, to Szechwan. This line will be built by the Chinese to connect the French railways in the province of Yunnan with the Yangtze valley system at Chungking, about 500 miles.

Arrangements are being made to finance a line from Arica, Chile, to La Paz, Bolivia, via Yungas. A good deal of difficulty has been experienced owing to the opposition of some interests which have received a concession to build to Yungas, although no particular route was specified. It is expected that the new line will prove very profitable financially, and the Bolivian government, which has granted the concession notwithstanding the opposition, is doing everything to bring about its construction.

The Peruvian congress has passed a bill for construction of the Ucayali Railroad, which will connect the most easterly railway head in Peru with Amazon river navigation. The line will extend 270 miles from Goyllarisquisca, terminus of the Cerro de Pasco Railroad, to the port of Pucalpa, on the Ucayali river. The route will follow the Huallaga river, crossing the mountains which separate it from the Ucayali river, and will cross the extensive Sacramento pampa. It is planned to run 2,000-ton steamers from Pucalpa to Iquitos, where connection will be made with ocean-going vessels. Steamboats are now operating from Pucalpa 300 miles south on the Ucayali river. By the concession, which needs only the signature of the president to become effective, the Peruvian government will issue $10,000,000 in bonds, payable in instalments with the completion of each 25 miles of the road, to the Amazon & Pacific Railway Company, a corporation organized in New Jersey. The bonds will bear 6 per cent. interest with 1 per cent. for a sinking fund, and are to be secured by the tobacco tax. The concession includes the right to extend the railway 190 miles from Cerro de Pasco to the Pacific coast, and upon its completion a further payment of $2,500,000 in Peruvian bonds is to be made. Five years are allowed for construction of both branches, which are to become government property after the concessionaire has operated them for 25 years. In addition to the bonds mentioned Peru is to convey 5,000,000 acres of land, the title to which becomes accomplished when the president approves the bill, the concessionaire, A. W. McCune, having already deposited $150,000 as security for the execution of the contract. The Sacramento pampa contains 80,000 square miles. The engineers who surveyed the road were the first of the white race known to have crossed the plain, which they found inhabited by about 250,000 people.

THE LITTLE SALMON RIVER BRIDGE.*

Interesting Features of Design and Erection of a 4,000-Foot Viaduct on the National Transcontinental Railway.

BY R. F. UNIACKE,
Bridge Engineer, National Transcontinental.

The Eastern division of the National Transcontinental Railway from Moncton through the central part of the province of New Brunswick and through the province of Quebec to the city of Quebec is built with a ruling of 0.4 per cent. compensated grade, and a maximum curvature of 6 deg., requiring some advanced bridge and high viaduct construction. The valley of the Little Salmon river, 185 miles from Moncton, presented one of the obstacles to be overcome, as the grade development showed a crossing over 4,000 ft. long, with a height of 200 ft. above the water line.

The line approaches the west end of the structure on a 6 deg. curve through a rock cutting and crosses on a tangent bearing N. 10 deg. 27 min. W., the grade rising 0.40 ft. per hundred. There are 24 towers, 58 ft. 9 in. centers and 25 intermediate spans, 100 ft. 3 in. center to center, the end spans being 100 ft. 10½ in. center of bent to outer end of steel. All the tower spans are alike, and also the intermediate spans, except that the masonry ends are extended to give the required bearing. The towers and bracing are made alike as much as possible, necessitating only one set of templates for the spans and tower parts which duplicate each other. A through girder construction was adopted, the girders being spaced 17 ft. 6 in. center to center, while the floor beams with gussets were spaced 14 ft. center to center along the plate girders. The east end span is on a spiral to a 6 deg. curve, and in consequence the girders are deflected at this abument 1 ft. 3 in. off the tangent.

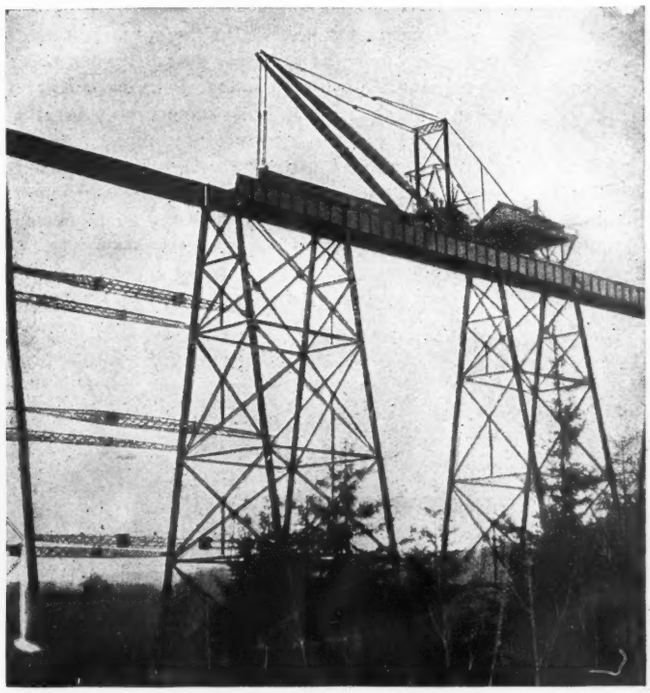
Little Salmon River Viaduct.

There were several reasons which led to the adoption of through girders. In high trestle construction where the use of falsework is out of the question, the most economical layout is that of an intermediate span as long as can be handled with a well-designed traveler working from grade so as to reduce the number of high towers, their pedestals and foundations. Spans of 60 ft. with 40 ft. towers are generally employed where deck girders are used, spaced 9 ft. center to center, and bridge ties resting on the top flanges. As the through girders are spaced 17 ft. 6 in. center to center, intermediate spans of 100 ft. could be handled, the bearings of the traveler resting on the flanges, thus giving a wider base for the traveler in handling loads. The stability of the erection outfit is amply provided for so that in this case girders weighing 30 tons were placed. It certainly gives a feeling of safety to see from the car window the flanges of a heavy steel girder, and that this is not altogether sentiment is shown by the fact that instances of derailment are recorded, in which the car held to the roadway by the lateral resisting power of these girders.

*From a paper read before the Canadian Society of Civil Engineers.

SUBSTRUCTURE.

To avoid building the steel work on a curve at the east end and also to utilize the material in the rock approach cut without waste, an abutment of reinforced concrete placed on top of the rock fill was decided on. A buried pier built from the original surface at this point would have been over 100 ft. high, difficult to design and build, and very costly. The concrete was reinforced to prevent danger from cracks due to settlement in the bank, and in order to give time for the bank to settle the ends of the girders were temporarily supported by a crib-work of square timber.



Erection Derrick.

In the design of the pedestals and west abutment, borings and test pits were first made to determine the character of the soil. This proved to be of compact sand, gravel and hard pan, so that no piling was required, the footings being designed to distribute the load at a pressure of from 2.5 to 4 tons per sq. ft. The four pedestals near the water line at the banks of the river were built with curved cutwaters, the axis of piers being parallel to the direction of the current, forming suitable ice breakers. The anchor bolts for pedestals consisted of two rods, 2 in. in diameter, the lengths varying according to the uplift to be resisted. These rods were anchored at the bottom by spacers of 10 in. channels and washers, the concrete being built around them. In order to give room for a little variation in their position, conical forms were set around each bolt, a lip being left at the top extending beyond the base plate of column through which these

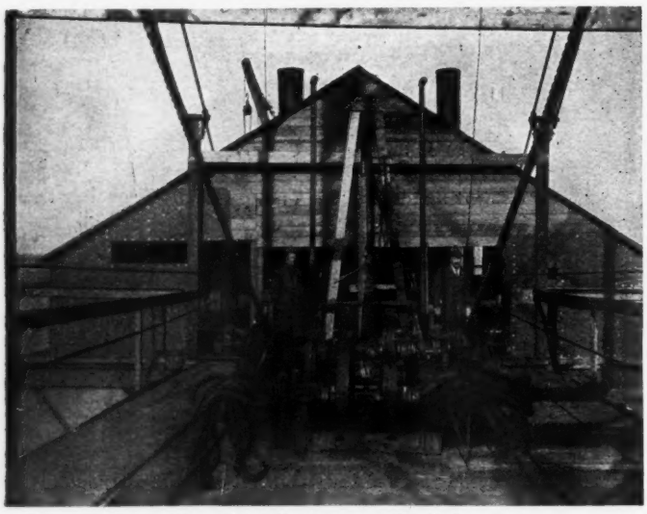
voids were filled with grout after the steel was erected. The west abutment or buried pier was about 40 ft. in height above the footing course, and in order to reduce the pressure on the soil and allow the embankment to run through and surround it, an arched void was left in a longitudinal direction. No difficulty was experienced in building to this design.

In laying out the work no triangulation was required and an ordinary steel tape was used. As provision is made in the girders for expansion, a slight variation in the position of the anchor bolts is permissible, providing the expansion slots are made longer than the theoretical length requires. The chief difficulty consists in maintaining the anchors in a vertical position and protecting them from rough usage from swinging buckets of concrete and other causes.

DESIGN.

The Dominion government specifications were strictly adhered to in the proportioning of the members. The compression members were figured for the pin ended formula of these specifications. In the tension members of the towers a limiting length of 200 $\frac{1}{r}$ was used to avoid sagging of members, to make them capable of resisting compression and to give initial stiffness. Bulb angles are used in the sway bracing of towers, which make a very stiff and economical section and avoid breakages in shipment, the great fault in box-laced sections of light angles. Traction and wind were figured as called for in the specifications.

The posts have a relatively small radius of gyration when compared with a built up channel section; but the saving in weight of details and simplicity in shop work fully compensates for the extra main material. The metal is used mostly in directly resisting the primary stresses, as very little is required for secondary purposes (viz., lattice tie plates, etc.), and in this way a stronger column is obtained. The section used has also the advantage of continuous webs in each direction, which are greatly superior to the easily bent lattice bars, and moreover the interior of the column is much more accessible to the paint brush for shop and

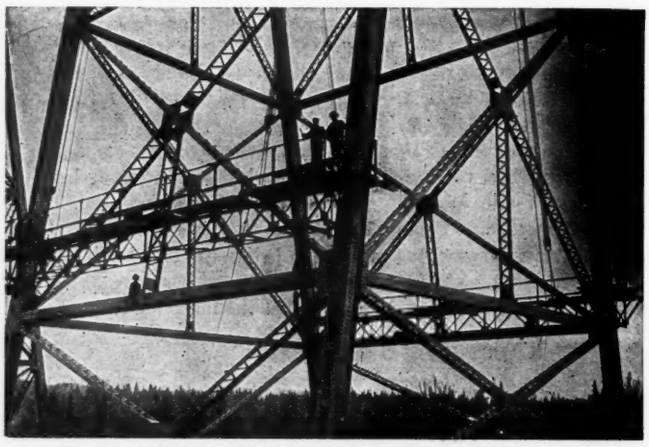


Erecting Engine on Derrick.

field coats. The section is symmetrical on both axes, having therefore its center of gravity in the center of the section, and no eccentric loading is induced from the girders. The small amount of redundant metal means uniformity of stress in the columns, and simplicity in the make up will decrease the cost of maintenance.

In calling for tenders for the steel work the company's usual practice was followed, the bridge companies being furnished a general design and details of girders and towers, with a printed form of tender in which was filled in the estimated weights of steel, and number of feet B. M. of timber in the floor. All bridge companies bid on the same basis, and were not required to make a single drawing to submit with tenders, but merely to fill in the unit prices for steel and timber erected in place, and to carry out the amounts on the estimated quantities furnished, viz., steel 14,000,000 lbs., timber 520,300 ft. B. M. After the tender was awarded the bridge company submitted stress sheets and details for approval before ordering the material from the mills.

The rails are directly supported by 8 in. x 12 in. x 14 ft. bridge ties resting on the steel stringers, every fourth tie being 16 ft. long to support the plank footway placed outside the guard timber for the convenience and safety of the section men. An outside guard timber 8 in. x 9 in. is dapped 1 in. over the ties, which are spaced 4 in. apart in the clear. The ties are secured to the stringers by ¾ in. hook bolts, and the guard timbers bolted through the tie with one ¾ in. bolt in every fourth tie. A steel



Riveting Bridges in Use on Tower.

guard rail 60 lbs. to the yard will be placed inside the gage line, and 8 in. therefrom in the clear, these guard rails coming together at the center of the track one rail length beyond the end of the bridge and being protected by a cast steel point fitting the rail section and spiked to the track ties.

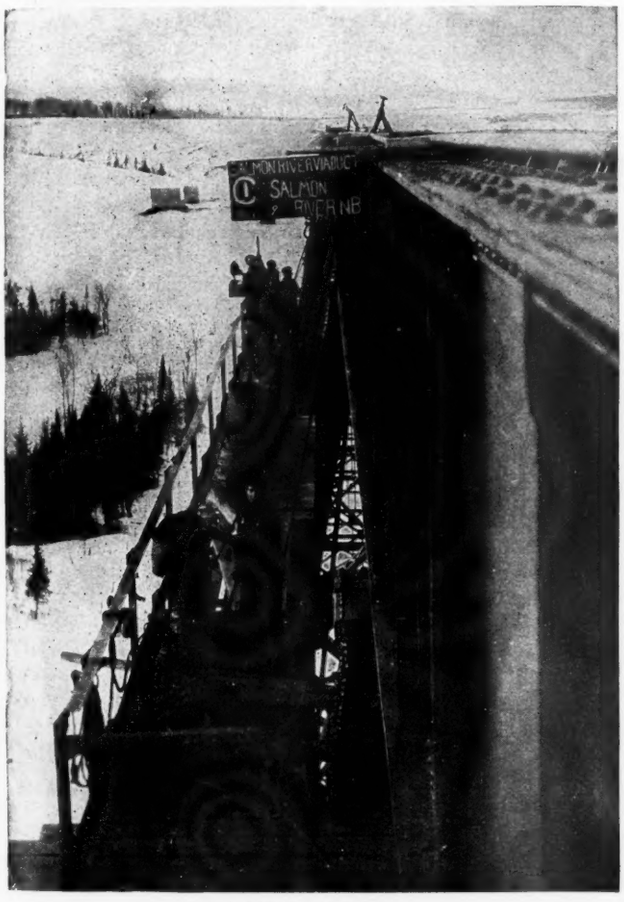
ERECTION.

Actual erection began July 27, 1910; the steel was all assembled and last span swung February 8, 1911, and all riveting and painting fully completed August 19, 1911. Material was unloaded at a siding at the west end and handled by a two-boom derrick car in the storing yard. A light standard gage locomotive with lorry cars handled the material from the storage yard to end of steel. The main feature of the erection outfit was the 30-ton two-boom erection derrick, traveling on the top flanges of the girders, the trucks of the traveler running on 115 lb. crane rails, the base of which rested on timber temporarily secured to the girder flanges. This derrick was self-propelling by means of a chain and sprocket connecting the trucks with the erecting engine, which had two 10 in. x 12 in. cylinders. The 115 ft. booms were box sections composed of four 36 in. x ¼ in. web plates at the center of the boom and tapering at the ends, connected by four 3½ in. x 3½ in. x ⅜ in. angles. This section was found to weigh less than a latticed section and the combined unit stresses from compression and bending were very much reduced. The writer was told that the men working on the traveler were very enthusiastic over the ease with which the big machine handled its work. The wind at the deck of the trestle was very strong, and was generally blowing at right angles to the bridge, but the work was practically never held up on this account. The use of the erection struts is shown in the photograph. After a tower and its girders were assembled the erection struts were removed and used again to stiffen the first bent of the next tower until it too was connected and self-sustaining. Hook bolts temporarily connected the ends of these struts with the columns and proved very efficient.

Another important feature was the use of riveting bridges for convenience and safety of the men in assembling, riveting, and

painting. They were carried along the top of the trestle by the two-boom yard derrick car, and after being secured to the top girder flanges by hooks, the cages were lowered or raised by hand, as required, the free end of the tackles being on the platform, so that the riveters could slack away.

The erection staff varied from 60 to 80 men, of which but six were employed on the big traveler. One sub-foreman and 14 men were used to assemble the steel work, and the rest formed from two to six gangs of riveters, the crew for derrick car used for unloading material in the yard, and the driver for the light locomotive. The riveting gangs averaged 302 rivets per gang per day of 10 hours, a rate which would probably have been reduced by 50 per cent. if ordinary staging had been used, instead of the riveting cages. The erection was accomplished in rather remarkable time, considering the force employed. A pair of 100-ft. girders were swung and bolted in their final position



Riveting Bridge.

in 37 minutes, and floor beams and stringers assembled in half a day.

One coat of Sherwin-Williams black Metalastic paint was used in the shop, with a coat on each contact surface before assembling. Two field coats were applied, the first Metalastic brown, and the final coat Acheson Graphite. Rivet heads and shop marks were touched up before applying the field coats. The use of a different shade for the first field coat was a great help to the inspector, to enable him to see that the several coverings were properly applied.

The inspection covered mill, shop, and erection inspection, all in accordance with the Dominion government specifications of 1908. The bridge company furnished the inspection company with copies of all mill orders. An inspector was present at the rolling of the material furnished on these orders, making complete surface inspection of every piece. Specimens were selected from the material so inspected, and these test pieces were forwarded to the machine shop to be machined on both edges and straightened true. The test pieces so prepared were sent to the testing laboratory at the mills, where they were measured and broken in the testing machine, in the presence of the inspector. The inspection company also secured from the rolling mills a certificate of the chemical analysis of the steel so tested. Frequently the inspector required drillings to be taken from the test pieces at the mills, to check up the accuracy of the reports presented by the rolling mill company. Test pieces and material which they represent were identified by melt numbers.

The inspector at the mill also undertakes to see that the material is properly loaded in the cars ready for shipment to the bridge works. Full descriptive reports are then made out by the inspection company, showing the number of pieces and the size and length of each piece so shipped from the steel works, together with the results of tests, and these reports are sent to the bridge engineer.

The representative of the inspection company is present at the bridge works to watch each operation and check up material. Full detail reports are made out showing what material has been constructed during each week, also what material is under course of construction, and what material has been shipped, commenting on any errors that may have been discovered and how they have been remedied, with a report in addition as to what future progress would be expected.

Inasmuch as the material was purchased on a pound price, the inspection company had special representatives at each of the bridge plants estimating the weights of all material entering into the bridge members, so as to check up against the actual weights furnished by the bridge company. If the actual weights were in excess of 2 per cent., as allowed by the Dominion government specifications, such weight was cut down to the estimated weight.

A representative of the inspection company supervised the erection of the entire structure, taking at least three photographs each week, showing progress and keeping an account of the labor. To show that the photographs are taken weekly, a special sign is furnished by the inspection company, on which the name of the structure appears, together with the date on which the photograph is taken, and this sign is embodied in the photograph. Weekly reports are furnished by the inspector, and the bridge engineer is kept advised as to all movement or delays that may occur. On completion of the bridge, the inspection company reports that the work has been carried on to the satisfaction of their inspector, and the bridge engineer, or his representative, then makes final inspection, after which payments for the completed work are made.

Throughout the construction a private stamp is used, bearing the trade-mark of the inspection company, together with a number representing the inspector who has used this particular stamp. This serves as a means of identification, so that the inspector at the shop, and also in the field may see that the material has been inspected and accepted. If any faulty or defective workmanship shows up the inspector who passed this particular piece of work can be easily located by the number of his stamp.

In the final estimates the actual amounts and cost under the several items are:

Substructure:

1,757	cu. yds.	1:2:4 concrete	@	$15.00
6,524	"	1:3:5 "	@	11.00
4,597	"	excavation	@	1.00
10,534	"	"	@	2.50

Superstructure:

Steel	13,991,310 lbs.	@ 4.68 cts.	=$654,793.31
Timber	518,041 ft. B.M.	@ 4.60 cts.	= 23,829.89
			$678,623.20

Progress estimates were paid monthly on the superstructure according to the following basis:

	Rate.
Steel	$4.68 per 100 lbs.
Timber in floor	46.00 per 1000 ft. B.M.

Schedule for monthly estimates.

	Rate.		
Steel provided	$2.00	per	100 lbs.
manufactured	1.00	"	"
delivered at site	.49	"	"
assembled	.98	"	"
riveted	.15	"	"
painted and fully equipped	.15	"	"
	$4.68	"	"
Timber delivered	$40.00	per	1000 ft. B.M.
framed and placed	6.00	"	"
	$46.00	"	"

This basis of payment was considered a fair and equitable distribution of cost throughout the different stages of manufacture. It is the result of experience on many bridges previously built by this and other bridge companies on the described method of working and specifications, and the writer believes may fairly be used in other similar cases.

The work was carried out under the general direction of the writer. The Dominion Bridge Company, Limited, Montreal, were the contractors for the steel.

TRAIN DESPATCHERS' ASSOCIATION.

The twenty-fifth annual convention of the Train Despatchers' Association of America was held at Louisville, Ky., June 18, 19 and 20. It was opened Wednesday morning in the Henry Watterson Hotel, C. H. Mullinix, chairman of the local committee of arrangements, in the chair. Mayor Head welcomed the convention to the city and Lieut-Gov. O'Donnell welcomed it to the State of Kentucky.

President Ford on taking the chair appointed a credentials committee, who reported 62 members present. The president, in his annual address, told of a greatly improved outlook for the association, owing to the efforts of the "boosting committee" and the increased interest taken in it by railway officers. Eighty-eight members were elected or reinstated, in addition to 187 elected during the year just closed. The report of the executive committee showed that there had been a net increase in the membership during the year of 12 members, aside from those elected and reinstated at the present meeting. Owing to abnormal expenses the financial result of the year was a net shortage of $105. Discussion of the treasurer's report resulted in the continuance of the boosting committee for another year, but under the direction of the secretary instead of the vice-president; and the secretary's salary was increased owing to his impending retirement from active railway service, which would enable him to devote his entire time to the association.

The principal report was that of the train rules committee. This was in the form of a memorial to the American Railway Association, suggesting or recommending certain changes in the standard code of train rules. The report was made the order of the day for Wednesday. On Tuesday evening there was a reception at which Secretary-Treasurer-Editor J. F. Mackie was the recipient of a beautiful loving cup suitably inscribed on one side and bearing on the other the representation of a railway train and below it a train despatcher seated at a table engaged in his duties. Light refreshments were served and there was dancing by the younger members.

The discussion of the train rule report lasted throughout Wednesday and Thursday. The report was discussed by paragraph and, with slight exceptions, was approved.

There was a vigorous discussion on the exclusive use of the "19" form of order, which was strongly advocated by J. P. Finan, to whom numerous questions were addressed with a view to making clear his assertion that the "19" form of order was actually superior in safety to the "31" form. Numerous members also testified to their use of the "19" form, both with and without block system; and the feeling of the convention was very largely in favor of its use.

A resolution offered by S. K. Buchanan (San Antonio & Aransas Pass) that it was the sense of the convention that the use of the "19" form of order, when surrounded by the safeguards in delivery provided in the report of the train rules committee, was safe and desirable, was unanimously adopted.

There was some informal discussion on the use of the telephone for train despatching, the sentiment of the despatchers present who had used it being largely in its favor. The argument that station operators could not keep so closely in touch with train movements as with the telegraph was considered a very minor objection, as appliances were now being introduced whereby sound was magnified and the operator able to hear almost as well as when listening to the click of the Morse sounder. And even where such appliances are not used, it is not necessary in most cases that operators should hear O. S. reports, as they can always obtain information from despatchers. The discussion lasted well into the evening session of Thursday. The latter session was prolonged until midnight by the annual election, which resulted as follows:

President—T. W. Kane (Northern Pacific), Livingston, Mont. Vice-President—J. P. Finan (A. T. & S. F.), Needles, Cal. Secretary-Treasurer (two years)—J. F. Mackie (C. R. I. & P.), Chicago; Editor—J. F. Mackie. The new president has appointed the following as members of the train rules committee: J. E. Scott (G. C. & S. F.), Geo. W. Greenert (C. & O.), F. B. Hubbart (C. B. & Q.), E. W. Westen (N. P.).

The association elected as honorary members, G. E. Evans, E. W. Grice and R. H. Tuttle. The date of the next convention was fixed for June 17, 1913, and the place Los Angeles.

Attention being called to the introduction in Congress by Representative Martin of Colorado of H. R. bill 25040 amending Section 2 of the present hours of labor law, the convention passed a resolution directing the president of the association to appoint a special committee of three members to wait on the committee on Interstate and Foreign Commerce of the House of Representatives at Washington, and protest on behalf of the Train Despatchers' Association against such legislation, which would seriously hamper railway operation, without in any manner increasing the safety of employees or the general public. The proposed amendment would prohibit the service beyond eight consecutive hours in each 24, of conductors receiving orders for their own train or carrying orders to other conductors or enginemen at intermediate sidings, or of operators at stations receiving, transmitting or delivering train orders; whereas the present law permits a 16 hours service in the case of trainmen and 13 hours' service in the case of station men where but one man is employed.

During the session of Thursday forenoon, Gen. Young, president of the Society of Confederate Veterans and a leading attorney of Louisville, addressed the convention on the Federal hours of labor law as affecting train despatchers and train employees.

On Wednesday evening the members visited one of the parks near Louisville, overlooking the Ohio river, saw a vaudeville show, and had a banquet, each member being furnished with coupons admitting to all the attractions of the park. Friday was devoted to a trip to Mammoth Cave in a special train furnished by the courtesy of the Louisville & Nashville. The members, their wives, daughters and visitors numbered 240.

The convention was the most successful in point of attendance, interest and importance of any held in 20 years. There was much enthusiasm over the improved prospects, and each member returned to his home with a new purpose to advocate the claims of the association upon all train despatchers.

The financial position of the Salvador Railway, Salvador, has shown such improvements recently that it is expected that the company will be able to get along easily without the annual government subsidy of $120,000, which expires in about five years. It is not certain that the government will decline to renew the subsidy, or at least a portion of it.

B. A. WORTHINGTON.

B. A. Worthington has resigned as receiver of the Wheeling & Lake Erie and its subsidiary companies, and on June 24 was elected president of the Chicago & Alton, succeeding Theodore P. Shonts, who resigned in order to devote his entire time to the New York traction interests, with which he has long been identified as president of the Interborough-Metropolitan Company. Mr. Worthington will assume the duties of his new office on July 1, and will have headquarters in Chicago. He was also elected a director and a member of the executive committee, succeeding J. S. Mackie, resigned.

Mr. Worthington's election marks the beginning of a new régime under which the Harriman interests will again exert a potent influence in the affairs of the Alton. The Union Pacific now holds a little over $10,000,000 of its preferred stock, and is understood to have recently taken, through Kuhn, Loeb & Company, $4,500,000 of the general mortgage 6 per cent. bonds. This is part of a proposed issue of $20,000,000 which is to be ratified by the stockholders at a special meeting on August 19, and which will be sold from time to time for much needed improvements which the present condition of the Alton and the requirements of its traffic demand. The Alton enjoys excellent earnings—at the rate of about $15,000 per mile—but has been handicapped by heavy fixed charges and by the need of enlarged terminal facilities in all of the three large cities it enters—Chicago, St. Louis and Kansas City—as well as additional yard facilities at its lesser terminals, a large amount of additional equipment and double-tracking, especially on the Missouri lines. It is understood that the new arrangement with the Union Pacific will make these improvements possible, and that the Harriman interests will secure a larger representation on the Alton's board. As president of the Alton, Mr. Worthington, therefore will be charged with the heavy task of building the road up to the condition which its traffic and its location warrant, and his experience and ability are of a character to render him eminently fitted for his responsibilities. He began his railway work on the Central Pacific, and all of his railway career until he was made first vice-president of the Wabash eastern lines on June 1, 1905, was passed in the service of the Harriman lines. Consequently, he is well versed in the Harriman methods and policies. He is an exceptionally hard worker, and his experience has given him a thorough training in the various branches of the operating department, as well as in an executive capacity. Whereas Mr. Shonts has for several years had his office in New York and has devoted most of his attention to other interests. Mr. Worthington will maintain his headquarters on the road in Chicago, and will devote his entire energies to the railway.

B. A. Worthington.

Like most railway executives, Mr. Worthington has risen from the ranks. He was born November 20, 1861, at Sacramento, Cal., and after receiving a common school education entered railway service on July 1, 1874, as telegraph messenger for the Central Pacific at Sacramento, soon becoming a telegraph operator. For five years from 1877 he was commercial operator for the Western Union Telegraph Company. Returning to the railway service in 1882, he was for six years chief clerk to the general master mechanic of the Southern Pacific at Sacramento, then for seven years chief clerk and secretary to the vice-president and general manager at San Francisco, and from July, 1895 to 1898 chief clerk and secretary to the assistant to the president. He was placed in charge of the tonnage rating of locomotives in 1898, and was superintendent from July, 1901, to August, 1903, first of the Tucson, and later of the Coast division. On August 20, 1903, he was made assistant to Julius Kruttschnitt, general manager at San Francisco, and was assistant director of maintenance and operation of the Southern Pacific Company and the Union Pacific system at Chicago from April 1, 1904, to February 9, 1905, when he went with the Oregon Railroad & Navigation Company as vice-president and general manager. He left the Harriman Lines on June 1, 1905, to become first vice-president of the Wheeling & Lake Erie, the Wabash-Pittsburgh Terminal and the West Side Belt, comprising the Wabash lines east of Toledo, Ohio, and in September of the same year he was made general manager also of those lines. On June 8, 1908, he was made receiver of the Wheeling & Lake Erie, with office at Cleveland, Ohio.

During his connection with the Harriman Lines Mr. Worthington devoted much of his time to statistical work, and developed to a remarkable degree the faculty of analyzing operating results. He is said to have originated on the Southern Pacific the plan of making surprise tests which was at first widely criticized, but which has since been adopted as standard practice on many large systems. He is a man of pleasing personality, a good executive, and, while known as a rather hard taskmaster, has always set the example of unremitting energy himself, and bears a reputation for fair dealing with his subordinates.

W. M. Duncan, who has been Mr. Worthington's legal adviser on matters pertaining to the Wheeling & Lake Erie receivership, has been appointed to succeed him as receiver.

The election of a new president, and the closer affiliation with the Harriman interests, mean much to the Alton, which for several years has not had adequate facilities for handling the traffic offered. With the addition of a strong friendly connection, which it has heretofore lacked, and with a strong management, the necessary expenditures for improvements should place it in an unusually favorable situation.

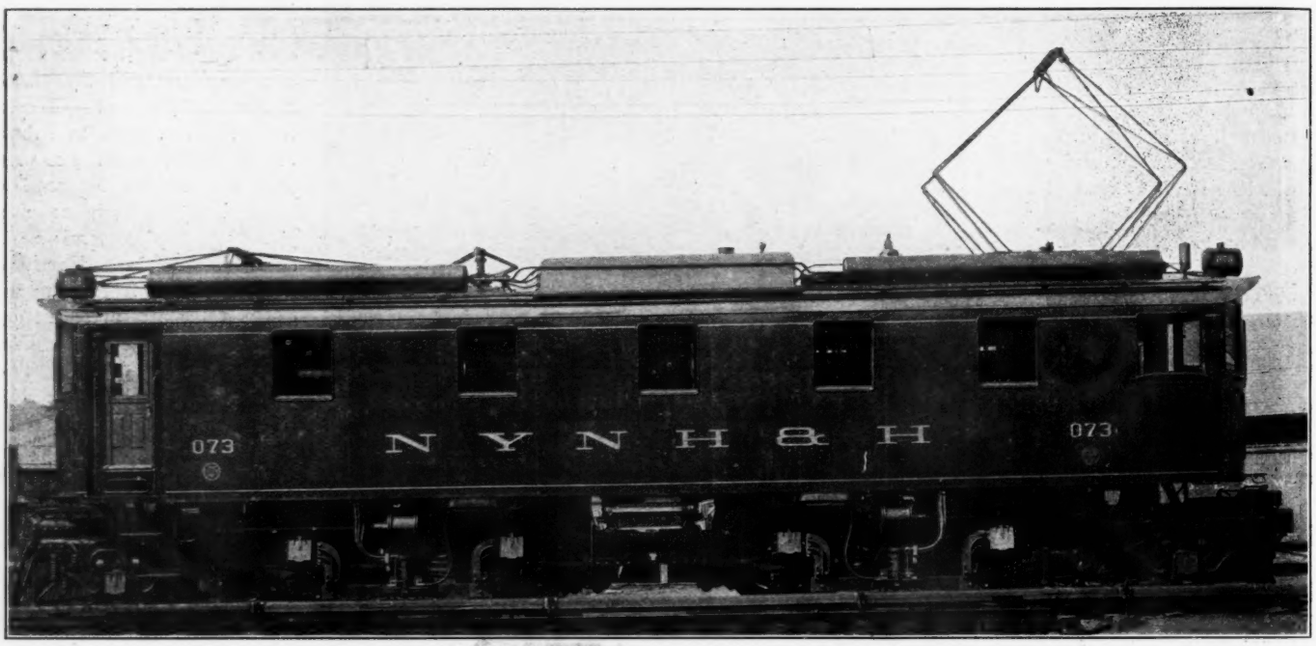
EIGHT-MOTOR ARTICULATED ELECTRIC LOCOMOTIVE.

New Engines for the New Haven, Most of Them Being Designed to Haul 1,500-Ton Freight Trains at 35 Miles an Hour.

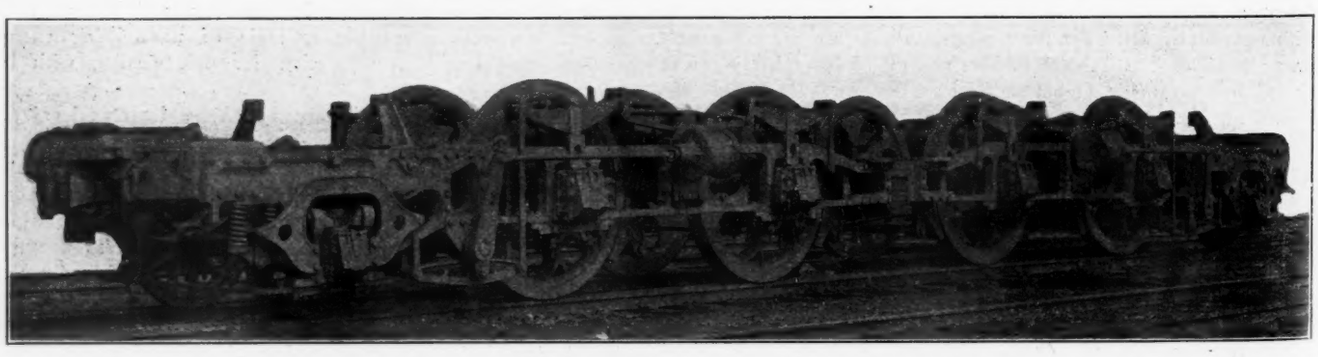
The New York, New Haven & Hartford will shortly receive 39 heavy service electric locomotives, to be used between New York and New Haven, which are being built by the Baldwin Locomotive Works and the Westinghouse Electric & Manufacturing Company. The design varies considerably from that of previous electric locomotives, and 36 of the engines are arranged for single-phase service only. There are no decidedly new features involved, as all of the methods used have been heretofore employed, but never in the same combination.

Each engine is driven by four twin-motor units—eight motors in all—with one twin motor unit mounted over each driving axle. This arrangement has shown itself to be a very desirable one for the following reasons: Peripheral speed is a limiting feature in railway motor design. With two small motors it is possible to use a rotative speed approximately twice that with one large motor. Each motor has therefore one-half the number of poles of practically the same size as would be required by one equivalent large motor. Therefore two of the small motors have practically the same number of parts, such as field coils, armature coils, and brush holders, as would be required by one large motor. Each of the small motors has a diameter practically half of that of one equivalent large motor, hence a saving in weight and space. A further saving in weight results, because each small motor exerts but one-half the torque that must be exerted by one equivalent large motor; therefore a single gear, meshing with the pinion of each motor, can be used in place of two gears. The use of a single gear is possible, and the motor can be made longer, which permits of a more economical design. The motor armatures are interchangeable with those used on the New York, New Haven & Hartford and the New York, Westchester & Boston motor cars. Finally, eight motors actually cost less than do four having the same aggregate output.

The articulated running gear is similar to that used on a previous order of locomotives, and has shown itself to be easy running as far as shock to the equipment in the locomotive cab is concerned, which is one of the reasons why it has been used. The cab rides on semi-elliptic and helical springs in series. This arrangement resembles, in general principal at least, that which is employed for and makes riding easy in passenger cars. In general design and arrangement all of the locomotives are the same, but the three bearing the road numbers 073 to 075 are for both alternating and direct-current operation in fast freight and heavy passenger service, and are



Eight-Motor Articulated Electric Locomotive for Fast Freight and Heavy Passenger Service on the New Haven.



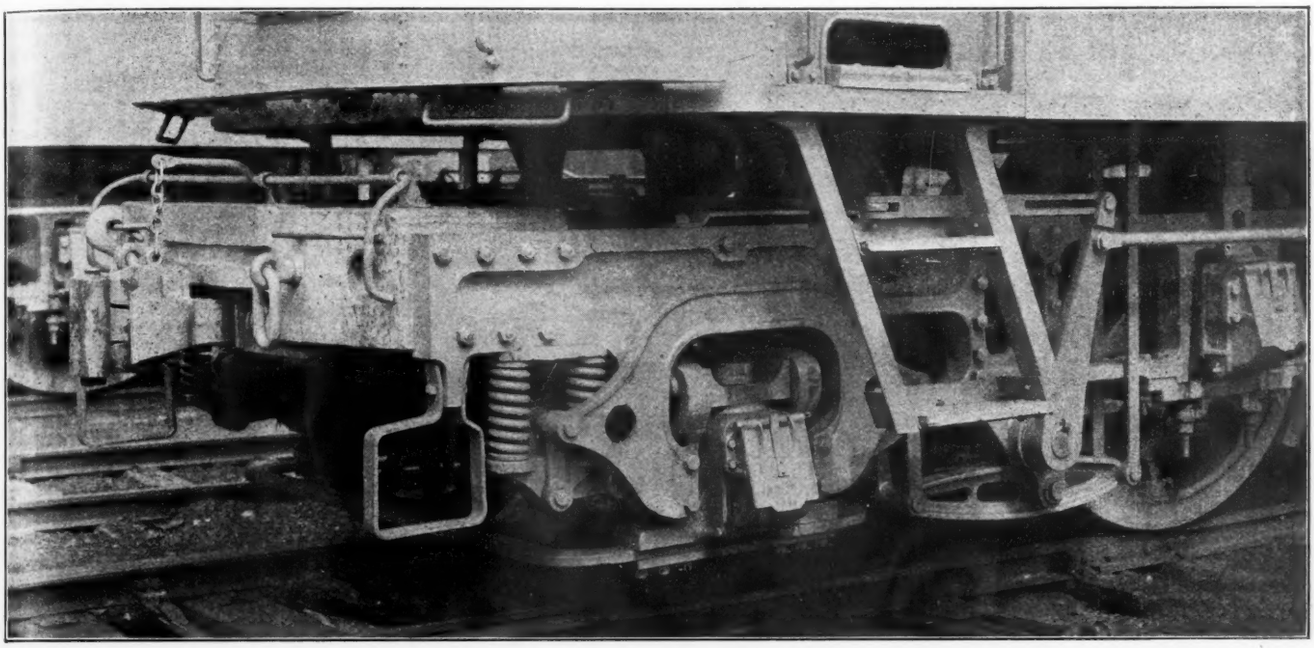
Arrangement of Trucks and Running Gear on New Haven Electric Locomotive.

designed to handle a trailing load of 800 tons at a maximum speed of 45 miles an hour. When operating on single-phase alternating current they take energy at 11,000 volts and 25 cycles, and on direct current, at 650 volts.

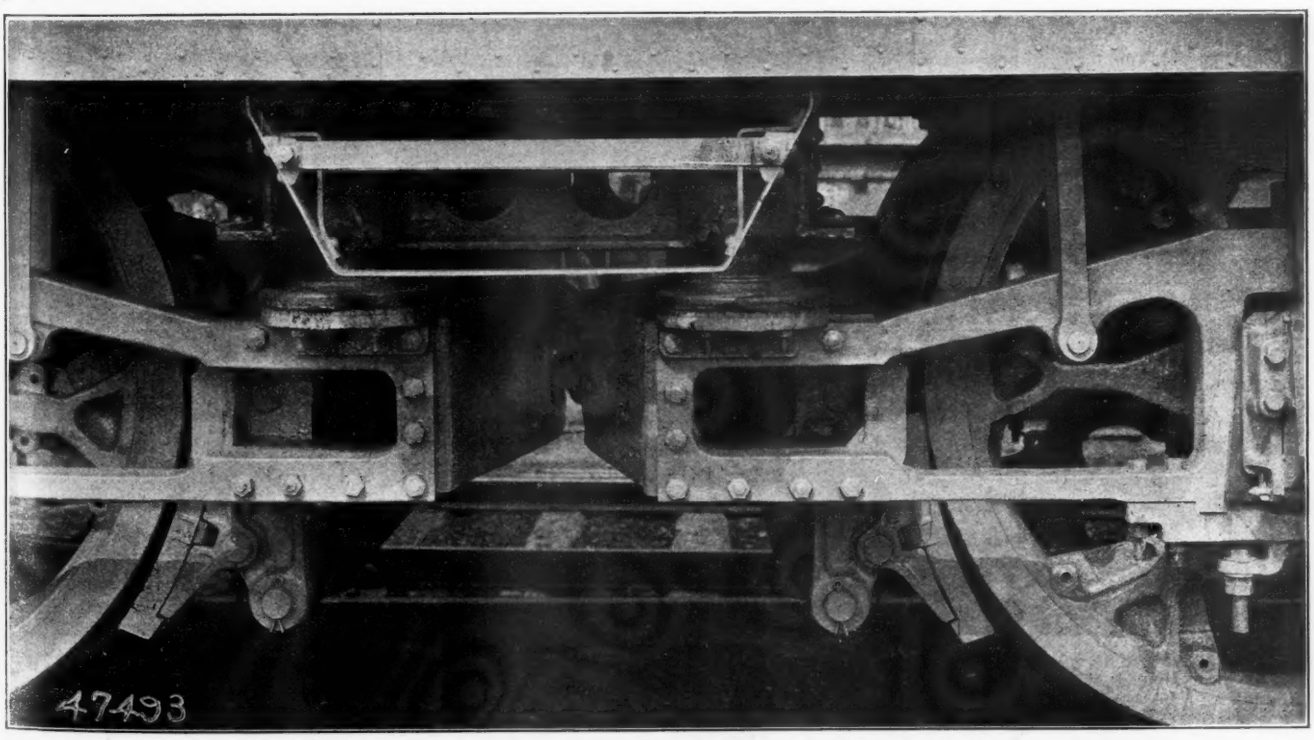
The remaining 36 locomotives, which bear the road numbers 076 to 0111, are equipped for 11,000 volt, 25 cycle, alternating current operation only, and are primarily for fast freight service, but will also sometimes haul passenger trains; they are designed to handle a trailing load of 1,500 tons at a maximum speed of 35 miles an hour, and exert a maximum tractive effort of 40,000 lbs.

The four pairs of driving wheels and the two pairs of small leading wheels are arranged in two groups, each group having outside frames of the bar type. These cast steel frames are 4 in. wide and are similar to those used in steam locomotive practice. The pulling and buffing strains are transmitted entirely through the truck frames which are braced transversely at the ends of the trucks and between the driving axles. The inside faces of the driving pedestals are finished to a taper and are fitted with adjustable wedges. The pedestal binders are cast steel.

The drawbar pull is transmitted from truck to truck by a drawbar which is adjusted to leave a ½ in. maximum clearance between the end ties of the trucks when all the slack is pulled out. The truck crossties or bumper girders which are located on the trucks at the mid-length of the locomotive, are



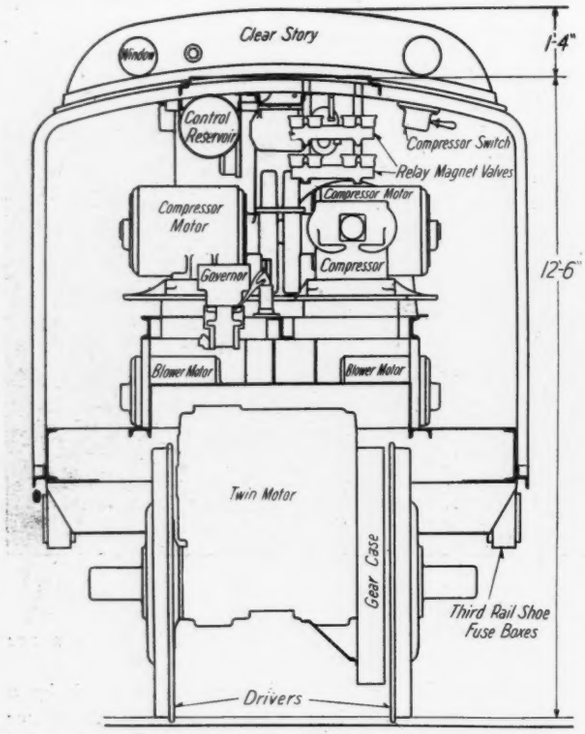
Rushton Truck as Applied to New Haven Electric Locomotive.



Spring Buffers and Bumper Girders on New Haven Electric Locomotive.

equipped with spring buffers which assist in transmitting the buffing shocks from truck to truck. The drawbar has a slotted hole in one end. With this arrangement all pulling strains are transmitted through the drawbar and pushing and buffing shocks through the spring buffers.

Midway between the driving wheels the bar frame of each truck is braced transversely by a built-up structure on which the truck center pin is mounted. This pin carries no weight, its only function being to push the cab underframe and to hold

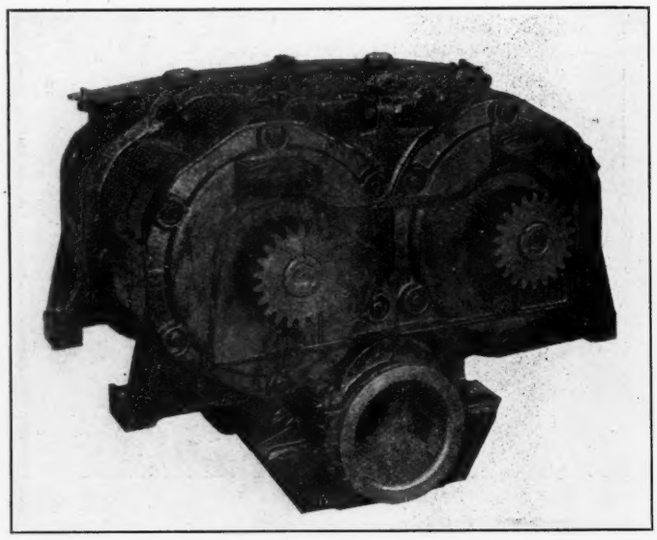


Transverse Section Through New Haven Electric Locomotive.

the truck in alinement with the cab. The center-pin of one truck is allowed a limited longitudinal movement with reference to the cab underframe to relieve the cab frame from pulling and buffing strains.

A two-wheel truck of the Rushton type with outside journals is arranged under each end of the locomotive and carries the small guide wheels. The Rushton truck is of the radial type, its frame being connected to the main truck crosstie by two links which are so arranged in relation to one another that the intersection of their center lines, if they were extended, would be on the center line of the locomotive at the correct point for the truck radius-bar pin. This construction was adopted because the motors are so located that it is impossible to place the radius pin at its normal position on the center line. A radial type drawbar, arranged to receive a housing for a Westinghouse friction draft gear, is mounted on each end of the engine. Thrust springs are provided to limit the lateral movement of the drawbar. The coupler shank is supported by a carrier iron which is bolted to the end bumper casting.

Each group of two pairs of driving wheels and a pair of truck wheels is equalized on each side of the locomotive. The springs are of the usual semi-elliptic form and are mounted directly over their respective boxes. Helical springs support



The Twin Motors Assembled.

the truck frames at their outer ends. The equalizing beams are of cast steel.

An underframe, composed of two 12 in. steel channel side sills and two trussed center sills, supports the cab and equipment. The cab covers the whole locomotive and is built of No. 14 steel plate on a Z-bar frame. The cab underframe is supported at four points on each unit, two at the inner ends of the truck with the centers 84 in. apart transversely, and two between the truck wheels and the adjacent driving wheels, with centers 34 in. apart transversely. As this arrangement is duplicated on both units, there are four points of support at mid-length placed wide apart transversely and two points near each end, placed comparatively close together. The weight of the cab is transferred to the truck frames through coil springs, and the spring pocket plungers slide on the frame crossties when the engine is traversing curves. Thus the cab floats

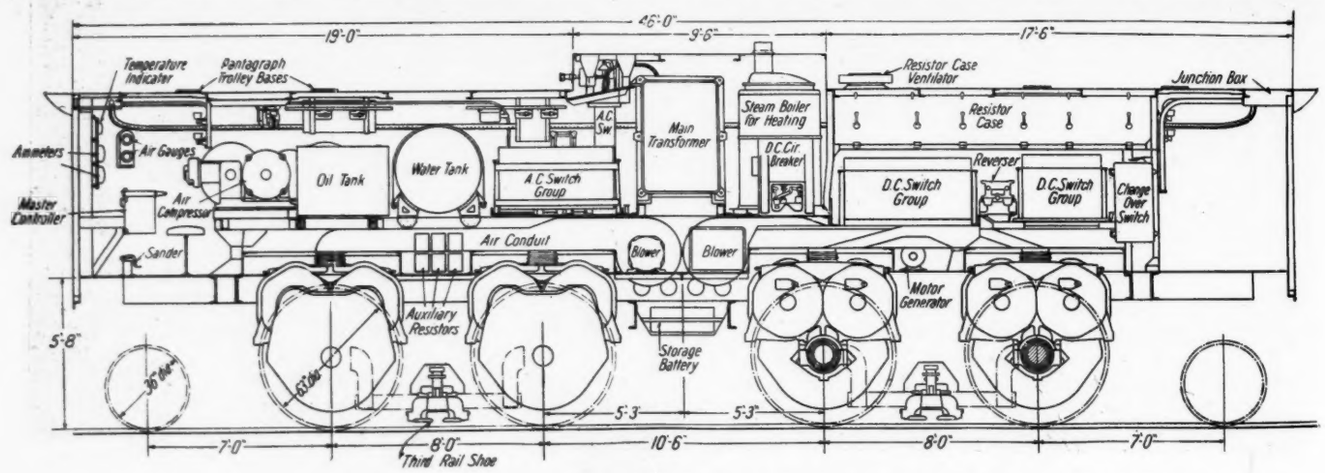


Diagram Showing Arrangement of Apparatus on Articulated Electric Locomotive for the New Haven.

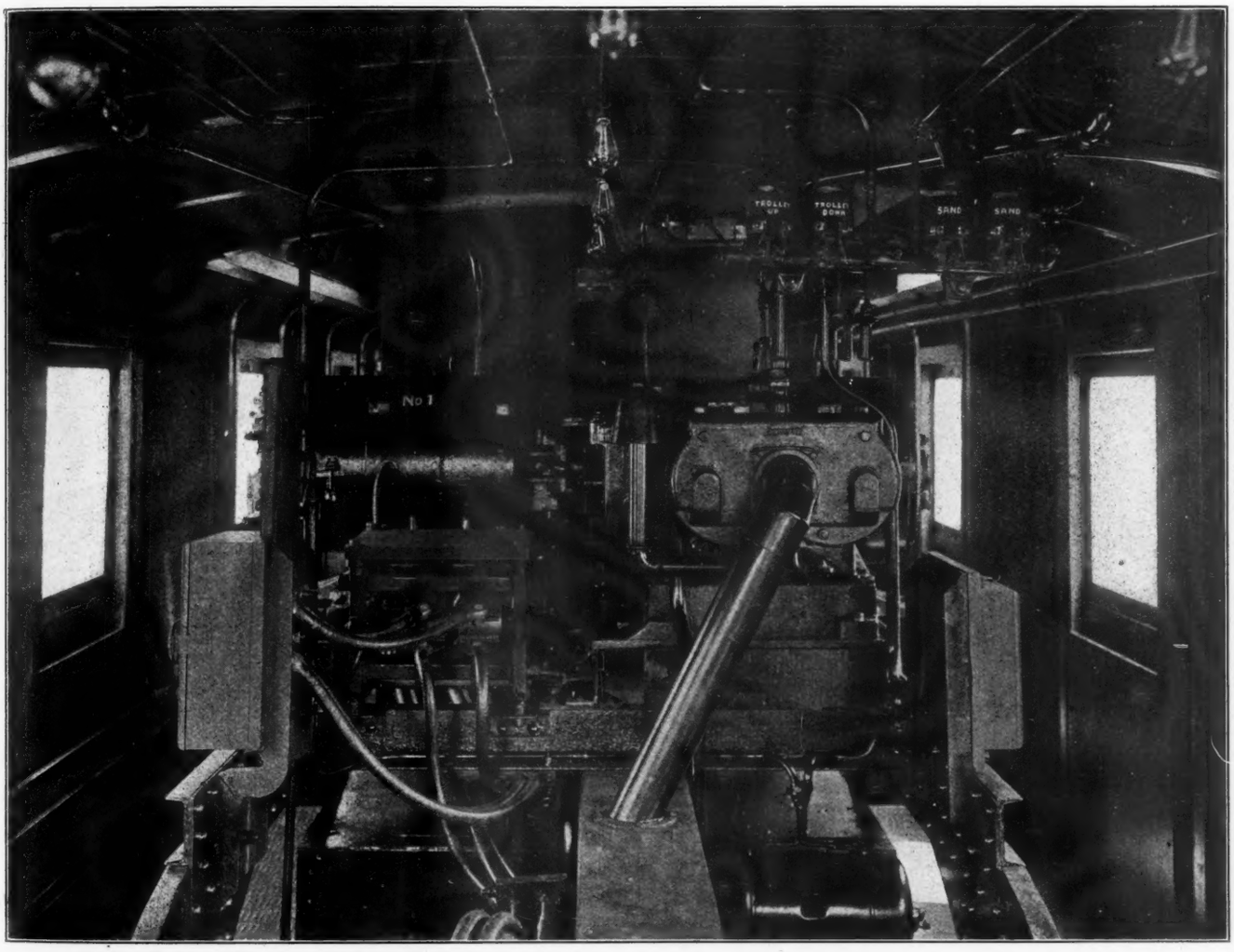
on the trucks and is held in proper alinement with them by the center pins.

The principal dimensions of the locomotives are as follows:

Length between coupler faces	50 ft.
Width over all	10 ft. 3 in.
Height to top of cab	12 ft. 6 in.
Height to top of clear story	13 ft. 10 in.
Wheel base, rigid	8 ft.
Wheel base, total	40 ft. 6 in.
Driving wheels, outside, diameter	63 in.
Driving wheel centers, diameter	56 in.
Driving journals	7 in. x 13 in.
Truck wheels, diameter	36 in.
Truck journals	6 in. x 12 in.
Weight on driving wheels, for a. c.—d. c. engines	182,000 lbs.
Weight, total locomotive, for a. c.—d. c. engines	240,000 lbs.

quill and driving wheel axle so that the drivers are free to follow irregularities in the tracks. This method of mounting relieves the axles of the dead weight of the motors and insures the operation of the locomotive being easier on the track. The tops of the motors extend into the cab about 6 in. above the floor line. A low deck is built over each pair of motors and doors are provided in the decks in such positions that free access to the commutators and armature bearings is afforded. Flexible leads of ample length to accommodate all movement of the motors relative to the cab extend through insulating bushings in the floor and electrically connect the motors with the control apparatus.

Of the 39 locomotives three are arranged for operation on



Interior of Cab Showing Air Compressor and Motor-Generator Set for Charging Storage Batteries.

Eight No. 409-C. single phase, commutator type, series motors, each having a capacity of 170 h. p. on a one hour rating, drive each locomotive. The motors are grouped together in pairs. The two motors of each pair—a right-hand and a left-hand motor—are bolted together to form a unit. One pair of motors is mounted rigidly on the truck frame over each of the four driving axles. Each pair of motors is provided with two axle bearings which carry a quill which is concentric with and surrounds the axle. A single gear is secured on one end of the quill and into this gear mesh the two pinions keyed on the motor armature shafts. Mechanical connection between the quills and the driving wheels is effected through helical springs which are mounted between the driver spokes and the projecting arms provided on each end of the quill. A radial clearance of 1½ in. is provided between the inside of the

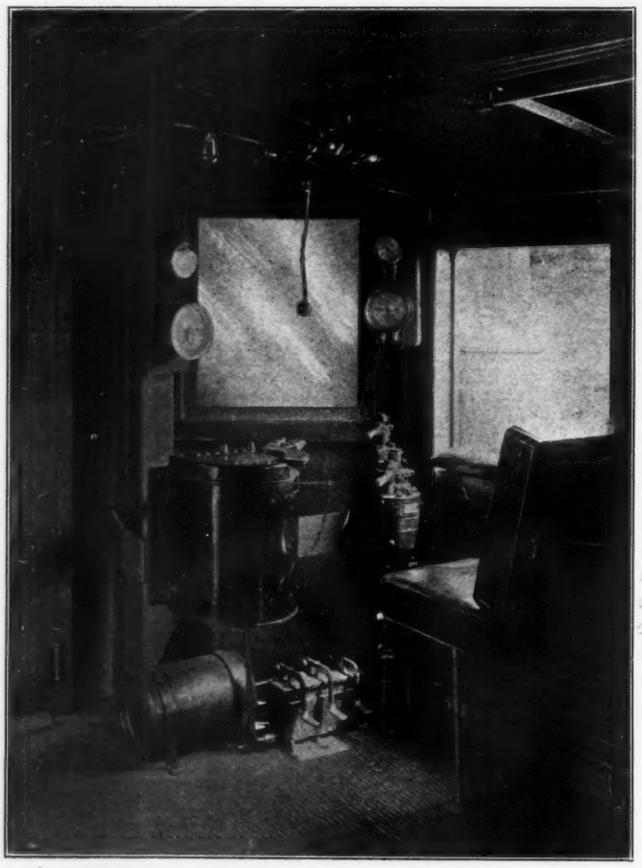
either alternating current or direct current, and these are provided with control equipment that can be used in either service. Therefore the pneumatically operated control switches work in combination with a transformer and preventive coils when the locomotive is receiving alternating current energy and in combination with grid resistors when it is receiving direct current. Each pair of motors is connected permanently in series. In alternating-current operation the four pairs are connected in multiple and on direct current they may be connected two pairs in series or all four pairs in parallel.

When operating on alternating current from the line at 11,000 volts, the energy passes through an oil circuit breaker to the primary of a main transformer and thence to the ground. A number of taps are provided on the secondary winding of this main transformer and are connected to the motor cir-

cuits through preventive coils, by means of the pneumatically operated switches. There are 12 voltage steps on the transformer winding, nine of which are for running points.

The pneumatic switches used for operation on alternating current are assembled in one group which is located close to the transformer. Reversal of the direction of rotation of the motors is effected with two pneumatically operated drum type reverses. Each reverser is so connected as to control two pairs of motors. When the locomotives are on direct current the control of the motors is accomplished with two other groups of pneumatically operated switches which connect the pairs of motors in series and in parallel in combination with the resistors. The switches and resistors used for operation on direct current are supported at the center of one end of the locomotive. The switches are arranged in one straight line with the resistors directly above them so that the connecting leads between the switches and resistors are of minimum length. Two master controllers are provided, one located in each end of the cab. With these the operation of the pneumatically operated switches and reverser, and hence the motors, can be regulated when the locomotive is running either on alternating current or direct current.

Two Sirocco type blowers for handling cooling air, each

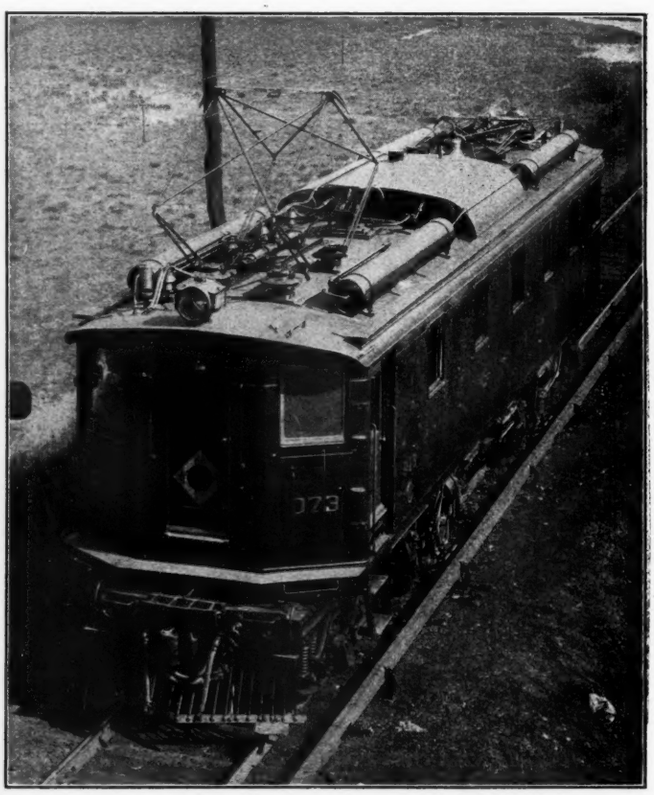


Interior of Cab Showing Engineman's Seat, Master Controller, Brake Valve, Air Compressor Gages, Temperature Indicator, Ammeters, and Pedals for Sanders.

driven by a small alternating current—direct current motor are located in the center of the cab directly under the main transformer. These blowers draw the air from outside of the locomotive and discharge it through the main transformer, motors and resistors. The equipment is thereby maintained at a moderate temperature, even when operating under severe overloads.

A double E. L. air brake equipment is provided on each locomotive. Two compressors, each having a capacity of 50 cu. ft. of free air per minute, are mounted within the cab to supply air for the brake and control apparatus. Brake shoes are applied to all of the driving wheels and separate air brake cylinders are provided for each group of wheels. The brakes can be applied to one group with a hand wheel located in the cab. An oil-burning steam heater plant, capable of supplying 800 lbs. of steam per hour, is installed in the three alternating-direct—current locomotives for the heating of passenger trains.

There are two pneumatically operated pantagraph trolleys



Looking Down on A. C.—D. C. Electric Locomotive for the New Haven.

for use with an overhead wire, and four pneumatically operated third rail shoes for use in the direct-current zone. There is also a small overhead direct current shoe-type collector for use at cross-overs. All of the collector devices are arranged so that they are under the control of the engineer at all times from either of the control positions in the locomotive cab.

The northern sections of the Shantung-Yangtze system, China, have been completed and put in operation as follows: The Tietsin-Tsinan lines have been in operation since November, 1910; the track to the south is complete to Hsuchow-in, but at present the Yellow river is crossed only by a ferry. Work on the difficult enterprise of bridging this stream is proceeding steadily, but it will be one year before trains can be run across the bridge. In the construction of this road there have been and are yet to be met many engineering difficulties, the most serious being those relating to the handling of flood waters from the river and canal systems crossed by the line. These flood waters in recent years have caused hundreds of thousands of deaths in the flat country the road traverses. Excepting the Yellow river bridge, the entire line will be completed shortly, thus giving the Yangtze valley connections with the sea at Tsingtau and opening up a great territory between the Peking-Hankow line and the sea. The completion of this railway will have a marked influence in preventing or at least in modifying the great famines caused by the floods in this portion of China.

THE IMPACT OF FLAT WHEELS UPON RAILS.

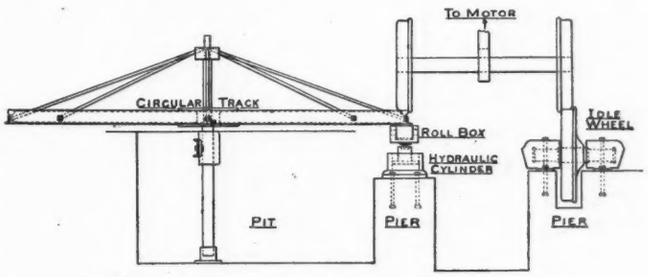
BY C. H. BENJAMIN,
Dean of the School of Engineering, Purdue University.

The numerous and somewhat unusual failures of steel rails during the past winter have led to a more careful investigation of the character of the rails themselves and the nature of the stresses to which they are subjected in practice. That the rail situation is at present a critical one is generally admitted by railway men when they are not talking for publication. The fact that the failures of rails in service, especially on the more northern railways, have amounted to hundreds and even thousands, is a sufficient indication that everything is not as it should be. It is true that most of these failures have been discovered in time and that the number of derailments and of casualties has been small compared with the number of rails failing, but this is due more to the greater care exercised by road foremen and inspectors than to any improvement in the rail itself.

While it is admitted that continued cold weather, which renders the road bed more rigid, the track more constrained, and the metal less ductile, is a prime cause of these accidents, this is no reason for passing over the matter lightly. When rails break in such numbers as they did during the past winter, it is apparent to anyone that the margin of safety is not as large as it should be and that something must be done either to increase the toughness of the rail or to diminish the stresses which come upon it.

There is no lack of direct evidence to prove that the blows produced by flat wheels, by eccentric wheels, and by improperly balanced wheels, are frequent causes of rail breakage. The experience of one road where 650 rails were broken by one flat wheel is evidence enough to show the need of more attention being paid to this subject. Whether the greater number of breakages are due to imperfections in the rail which exist when it leaves the steel mill, or whether they are due to a deterioration of the metal under the numerous blows and shocks to which it is subjected under heavy cars and in high speed service, is a question which has not yet been definitely solved. There is some evidence in the appearance of numerous broken rails which tends to show a local hardening effect produced by severe external punishment. There is also some evidence that rails have failed because of unusual strains induced by the processes of cold straightening. There are undoubtedly other rails which have failed because of segregation of various elements in the steel during the process of cooling, and there is also a strong presumption that many rails have been overheated during the process of manufacture. All these things being admitted, it is none the less important to know the magnitude of wheel blows as delivered in practice and the effect of these upon the metal in the rail. The subject of the energy of impact due to flat spots has already been treated at some length in your columns. In an article in your issue of November 27, 1908, I described briefly a proposed apparatus for making tests on flat wheels. During the discussion of this article and the paper which gave rise to it, several mathematical theories were advanced to account for the amount of energy developed. The discussion written by the late Professor Hancock is now generally admitted to be incomplete and to a certain extent erroneous. That of L. S. Spilsbury, of the Canadian Pacific, presented by H. H. Vaughan,* is probably as correct as any that could be written in the absence of experimental data. I have asked Professor R. G. Dukes, head of the department of Applied Mechanics of Purdue University, to review Mr. Vaughan's article and check the calculations therein contained, and he reports that he considers the reasoning and the analysis sound and justifiable. This latter discussion shows the possible effect of blows from flat wheels to be much less severe than was indicated in Professor Hancock's discussion. Nevertheless, the well-known fact that flat wheels sometimes do break rails which are sound and of good material shows the desirability of some experimentation in this field.

Some of the leading officials of the New York Central Lines have become interested in this matter and have made it possible to build such an apparatus at Purdue University. The machine will be available for a series of experiments after the opening of the university next fall. As finally built, the machine contains the essential elements of the one described in the issue of the *Railway Age Gazette* before referred to. It consists in the main of a circular track made of an 80-lb. steel rail supported by spokes of channel steel and by adjustable tie rods connecting with a vertical shaft. The shaft rotates freely in bearings allowing the circular rail to travel indefinitely. One wheel of a truck is supported on this rail and the other rests on an idle wheel so that the axle can turn freely, driving the rail by means of the wheel in contact with it. The rail is supported underneath the test wheel by a substantial roll box containing two large conical rolls. The box rests on a hydraulic plunger, a steel ball being interposed between the two. The plunger rests on oil contained in a large steel cylinder and pipe connections are made with indicators and gages. The axle carrying the test wheel is rotated at different rates of speed by a variable speed motor belted to a split pulley on the axle. A spur track runs directly to the machine and is so arranged that a car may be



Machine for Measuring Blows of Flat Wheels.

pushed into such a position that its forward wheels rest upon the proper part of the machine. The car can then be loaded with different weights and the axle can be driven at different speeds. For determining the laws of impact under different conditions, the test wheel will be ground true and spots of different widths accurately ground upon the tread. In this way, the relations can be determined between the energy of impact and the three principal elements, namely, width of spot, speed and load. This will enable us to formulate some law for the effect produced, in terms of the elements mentioned.

In order to calibrate the apparatus and determine the relations between the actual blow and the diagram given by the gage or indicator, a drop machine will be erected directly over the circular rail and a comparison made between the effect of known weights falling certain distances and the diagram produced by the recording apparatus. The rail will be turned by independent means at the speed desired while a wheel or roll on the lower edge of the drop rolls in contact with the rail. The drop will then be raised and released, striking the rail in a manner analogous to that of the test wheel. By such calibration, the errors due to the inertia and gyroscopic action of the various parts will be eliminated.

It is apparent that the usefulness of the machine is not limited to experiments on flat wheels, but that eccentric and unbalanced wheels may be readily tested in a similar manner. It is to be expected that some difficulties will present themselves and that the experiments at first will be more or less unsatisfactory. It is believed, however, that, in the main, the machine will justify itself and will throw considerable blight on a problem which has been so far more or less neglected. As the apparatus is somewhat novel and the field of experiment equally so, any suggestions for betterment of the apparatus or for conduct of the experiment will be gladly received and weighed by the writer.

American Engineer and Railroad Journal, December, 1908.

RAILWAY WAGES AND COST OF LIVING.

The Bureau of Railway Economics will soon issue Bulletin 34, being the second of its comparative studies of railway conditions in the United States and the principal countries of Europe. It relates to the wages paid railway employees and the cost of living, and is based on the latest years for which comparative data are available. A summary follows:

The average daily compensation of railway employees of all classes for the year 1910 was in the United States, $2.23; in the United Kingdom, $1.05; excluding supplementary allowances negligibly affecting the average, it was in Prussia-Hesse 81 cents, and in Austria 89 cents. The lowest paid railway employee in the United States, the ordinary trackman, receives a greater compensation than many of the railway employees of France, even those of higher grades and with responsible duties. The compensation of railway employees is from two to three times as high in the United States as in Italy.

A recent report of the English Board of Trade on railway wages shows that the average weekly pay of enginemen in the United Kingdom in 1907 was $11.17; of firemen, $6.67. In the same year enginemen on American railways received an average weekly compensation of $25.80, counting six days to the week, and firemen $15.24. Recent returns make it clear that in 1912 enginemen and firemen in the United States are compensated at rates of pay for specific runs that are two, three and four times as high as the corresponding rates on representative English railways. The annual compensation of enginemen in the United States, as reported by two representative railway companies, now ranges from $1,100 in switching service to over $2,800 in passenger service, and of firemen from $700 in switching service to over $1,700 in passenger service.

For Continental Europe, official returns in requisite detail are not available for a later year than 1908. The salaries and allowances of the typical engineman in Germany amounted for that year to $646.88, in Austria to $870.80; of a fireman in Germany to $424.59, in Austria to $532.03. The annual compensation of enginemen on two of the principal railways of France ranged in 1908 from $505.66 to $906.91, and of firemen from $324.24 to $595.98. In Italy enginemen received in 1908, salary and allowances included, from $581.10 to $812.70 a year; firemen, from $330.30 to $475.05 a year.

The average annual compensation of enginemen in the United States in 1908, on an estimated basis of 300 days' service, was $1,335; of firemen, $792.

In Belgium, enginemen received in 1907 from $23.16 to $38.60 a month; firemen, from $17.37 to $23.16 a month; conductors and station employees, from 46 cents to 96 cents a day. In the United States, in the same year, 1907, enginemen averaged, on the basis of 25 days' service, $107.50 a month; firemen, $63.50 a month; conductors, $3.69 a day; station employees, from $1.78 to $2.05 a day.

The rental of a three or four room house or flat is almost as high in Berlin, Paris, or London as throughout the United States, but in England and on the Continent it generally runs from $30 to $90 a year less. The quantity of food and fuel estimated by the Board of Trade of England as the standard consumption of a typical workingman's family costs in the United States 17.8 per cent. more than in France or in Germany; 35.3 per cent. more than in Belgium, and 38 per cent. more than in the United Kingdom.

It is well within the truth to estimate in a broad and general way that while the cost of living of a railway employee in the United States is less than fifty per cent. higher than that of a corresponding employee in the United Kingdom or on the Continent, his compensation averages over twice as great.

The completion of the Swaziland Railway, South Africa, will shorten the present route to Johannesburg, Transvaal, by nine hours and will eliminate the present expensive cartage charges.

MAKING RAILWAY ADVERTISING EFFECTIVE.

BY LOUIS BRENTNALL.

Quite a number of railways are doing more newspaper and magazine advertising today than in past years. The advertisements of many of these roads are well-written and effectively illustrated. Sometimes a special trip is advertised, or an excursion, and a free booklet given to those who answer the advertisement. A few railways have a regular advertising department. As considerable creative ability is required there are two features which help retain the services of a good advertising man: making his position authoritative and paying him a reasonably good salary. Generally, a railway advertising man who is used as a clerk or who is required to sit in the office most of the time, gleaning necessary information for advertising copy from such officers as he can get hold of, is not likely to attain the best results; for he is advertising things which perhaps he has never seen or had the privilege of testing personally. Some of the officers tell him about it and that is deemed sufficient. He selects a few fancy phrases and advertises the road's fine service as he understands it. Yet advertising copy which looks promising in the newspaper and which may make a strong appeal to the public may prove detrimental in its future effect, because deceptive. Usually, there is something "behind the scenes."

The X. Y. Q. road had been advertising for some time and as a result its trains were being well filled. As the passenger officers rode over the line they would sit in the observation car and talk over the successful excursions which had been conducted, as well as congratulate themselves on the larger traffic which was being handled by regular passenger trains.

However, a Mr. Smith, a passenger, was rather displeased with his trip, and, speaking to a representative of the road about the service, claimed that his train was very late, at one time had left the track, and that the crowded condition of the train made traveling uncomfortable; while the meals were not up to standard, etc. He was told, of course, that he was unfortunate in having been involved in these adverse conditions and that similar circumstances might have prevailed had he traveled over another line. But Mr. Smith was not to be pacified and his provocation grew into anger as he thought of what good things the advertising had promised him and how little of them he actually got.

A short time later this representative of the railway made a trip, determined to look into the service by considering himself as a regular passenger and observing the conditions as they were. At the sleeping car office he bought a berth ticket and proceeded to the train, reflecting that as soon as he entered he would take his favorite seat on the observation end and view the crowd of travelers which the advertising was bringing.

"Next car ahead, sir," said the polite sleeping car conductor; and the representative lugged his well-packed grips ahead.

"Nex' car ahead, sah," directed the porter at the second car.

The third car, however, proved to be a tourist car. Retracing his steps with his fifty-pound grips the representative informed the porter of his mistake.

"Wal, ah declar, boss, I don't just know whar your car is; you'll hav' to see the conductor."

Having completed his circuit by walking to the end of the train, the representative again appealed to the sleeping car conductor, who became meditative and examined his route book carefully. Finally he said, "Excuse me, sir, but your car is on the second section."

The representative reflected. He had come out to the train half an hour before its leaving time so as to obtain a seat on the observation end. He remembered that the advertisement had much to say about the observation car. It contained not a word about those who, for one reason or another, could not sit in it. No doubt some of the other passengers were thinking of the same thing. Before him were a hundred or more sleeping car passengers who found that they, like himself, were slated for **the second section.**

"I'd have taken the 'D. Z. route' had I known about this," said a man who was becoming tired holding two small children.

"You can't get back to the station through this crowd," remarked another man. "All this sleeping car company cares about is selling berths."

A traveling man bit his cigar savagely and said: "I never had any luck with the 'X. Y. Q.,' anyway. Here we have to stand for half an hour, jostled by these first-section passengers, while we bought tickets expecting some comforts."

"That's not all," complained a man who was accompanied by his wife and four children. "This second section is only going to run during the night and will then consolidate with the first section, when we shall have to ride in the coaches. I wanted sleeping car accommodations all the way, but failed to get them. What's the occasion for all this travel?"

"Why, the X. Y. Q. has advertised an excursion and is carrying the excursionists in with the regular traffic. You can see how it works; no more X. Y. Q. for me."

The jam of the people boarding the first section was terrific. The trainmen were doing all they could by working doubly fast in loading them on, but the people would push, all anxious to get a seat in the packed cars.

Finally, as the first section departed, the second section was in readiness and the tired travelers hastened to the restful seats. The sleeping car conductor on the second section was of an authoritative, "you-do-as-I-tell-you" kind—decidedly different from the one on the first section. "This is not your seat," he said gruffly to a lady, as he examined her ticket. "I think it is," she replied. "Then you say I don't know," he said emphatically. "I said nothing of the kind," replied the lady, becoming irritated; "the porter placed my things here and said this was my seat." Perhaps this porter was a new man, but this was no excuse for the conductor's impoliteness.

In the morning the passengers of the second section were ready to transfer to the first section.

"When I bought my berth ticket I was told I could pass from the sleeper into the coach in the morning," said the man who had the four children and had to accept sleeping car accommodation half of the way.

"You could do that," replied the conductor, "if this car had been on the first section, but as it is, the trains will be side by side and you must transfer to the other."

By this time the railway representative was making notes. These conditions would never do. They were occurring right along. The employees were doing their best, generally, considering that double service was oftentimes required. The sleeping car man, of course, needed training. Numerous trifling conditions were noted on this single trip which needed remedying, they ought to be remedied or else the advertising should be changed. If the service really didn't "stand up" as pictured, some patronage, at least, would be lost. Some of the traveling men were already avoiding the X. Y. Q., while some of the regular passengers had vowed that one trip over that road was enough.

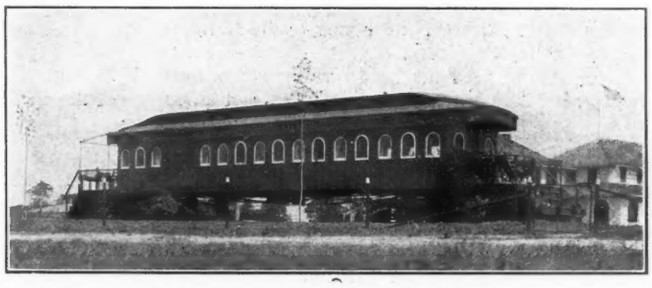
It is one thing for a passenger man to solicit a large passenger traffic, it is another thing for an advertising man to advertise it advantageously, and back of the whole should be a careful analysis of what the service really is and what the passengers think of it after they have tried it.

The section of the line of the International Railways of Central America, Guatemala, between La Union, on the Pacific coast of southwestern Salvador, and San Miguel, 42 miles, has been almost completed. It is expected that this will be open to traffic within the next two or three months. When the system of the International Railways of Central America has been completed it will be connected with the existing Salvador Railway and in addition will afford an excellent opportunity for the commercial development of the lesser known countries in Central America.

ROLLING STOCK, STATIONS AND DWELLINGS.

The freight car which is converted into real estate by being used as a passenger station or a dwelling house is a feature in many railway landscapes, and usually it is anything but a pleasing feature. More than once this feature of "economy" has been questioned or condemned in these columns. This being so, it is a pleasure to call attention to an example of economy of this kind which is suggested by the accompanying illustration, made from a photograph received from a Baltimore correspondent. The picture shows the summer residence of H. B. Anderson, assistant trainmaster of the Maryland, Delaware & Virginia, at Love Point, Md. This dwelling has two bedrooms, a dining room and a kitchen. For so modest a house, the underpinning seems rather costly; that is to say, the trucks appear to be all there, together with the air brake equipment. This, however, is a mere detail.

In speaking unfavorably concerning the use of freight cars as fixed structures we have perhaps slighted many commendable efforts to make the best of poor facilities. If so we hasten to express regret. We have a feeling of sorrow—or something stronger—for the superintendent who is obliged to use a partly decayed box car body for a station, or even for a temporary watchman's shanty; but the occupant of the improvised habitation certainly deserves friendly consideration. Often he deserves commendation. A lace curtain filling a rectangular hole 18 in. x 24 in., sawed out of the side of a boarding car, cannot be treated as other than evidence of taste—or at least of tasteful inclinations. If the side of the car is composed in part of boards, including scraps of letters and numbers, which display a half dozen colors, including the natural wood, that condition may be excused on the ground that the occupant of the car was long on lace but short of paint. One very modest box car body, flat down in the dirt and serving as the only shelter at a stopping place on a poor road in Michigan—a stopping place where the said poor road is crossed by another which is poorer—is so destitute of all appearance of comfort that it arouses in the approaching visitor a feeling of commiseration. But some cheerful minded person in the neighborhood has a disposition to put the best possible face on things; and, on nearer approach, one sees, in letters as neat and symmetrical as ever were seen on a dining car menu:



A Trainmaster's Summer Residence.

UNION STATION.

What could excite pleasanter emotions?

Even a dreary place can have a pretty name. *The Frisco Man* in a picture printed in its last issue, "gives away" the Frisco as having a station building which is poorer even than an old freight car! It is an old locomotive cab; open, of course, at one end. But the name of the place is "Fern." Moreover, the picture is published for the purpose of showing a wedding party disembarking from a train. A Frisco employee appears to have found his bride there. And this serves as a reminder that station buildings are secondary matters, after all.

General News Section.

A full crew bill was passed by the senate of Louisiana on June 19 by vote of 26 to 8. The bill has not yet passed the house.

The Union Pacific grain elevator at Armourdale, Kan., and a portion of the Union Pacific shops at that point were destroyed by fire on June 21.

At the twenty-third annual convention of the Travelers' Protective Association, held at Peoria last week, resolutions were passed in opposition to a parcels post.

The Chicago Transportation Association has announced the formal opening on June 27 of its new club rooms, the old quarters of the Hamilton Club, at the northwest corner of Clark and Monroe streets, Chicago.

Suits against the Grand Rapids & Indiana charging six violations of the federal hours of service law were filed in the United States district court at Indianapolis on June 22, and two suits against the Chesapeake & Ohio of Indiana charging violations of the safety appliances law.

The striking Chicago freight handlers at a mass meeting on Monday voted to reject an offer made by the railways at the intercession of E. U. Kimbark, president of the Chicago Association of Commerce, to take back 1,800 of the strikers individually before July 1, provided the strike should be called off at once.

In the county court at Hollidaysburg, Pa., June 20, W. F. Gitzman, a police officer of the Pennsylvania Railroad, was convicted of murder in the second degree. Gitzman, in pursuing a party of trespassers, fired his revolver for the purpose, it is said, of frightening the runaways, and his third shot killed one of the men.

The executive committee of the Federation of Federations, a recently formed organization of nine mechanical crafts on the railways west of Chicago, began a meeting at St. Louis on June 24 to count the ballots cast on the question of calling a general strike in sympathy with those on the Illinois Central and the Harriman Lines. It is stated that the results of the vote will not be announced for the present.

The Chicago, Milwaukee & St. Paul, and two of its employees have been indicted in connection with the collision at Odessa, Minn., last winter. The railway company and L. Gillic, conductor of the passenger train, which was struck by the following section, were indicted on charge of manslaughter in the second degree. Robert Law, the flagman, was indicted for violation of the company's rules.

The three brotherhoods (conductors, trainmen and firemen) who have been negotiating with General Manager Long of the Pennsylvania, have laid before him the results of their strike votes. They are understood to be nearly unanimous in favor of a strike. The principal grievances not yet adjusted, are the conditions of employment on electrified lines and the wages of trainmen in the Pittsburgh district.

The Pennsylvania has a dining car seating 36 persons. By omitting platforms and vestibules space has been provided for two additional tables seating six persons. On a demonstration to determine the capacity of the car, we are told that 108 persons were served in three hours with no rush or crowding. The new car is 83 ft. long over all; it is of steel, weighing 147,500 lbs. The kitchen is 19 ft. 6 in. long, and the pantry 7 ft. long.

On Sunday, June 23, the Chicago & North Western put in service a new train between Chicago and St. Paul-Minneapolis, by way of Milwaukee and the new line of the Milwaukee, Sparta & Northwestern, to be known as the North Western Special. The train leaves Chicago at 10 a. m., arriving at St. Paul, 10 p. m., and Minneapolis 10:25 p. m. It will include an observation parlor car, dining car, chair car and coaches, and will give the North Western six through trains each way daily between Chicago and the Twin Cities.

The judiciary committee of the lower House of Congress has voted to recommend to the House that Judge Archbald, of the Commerce Court, whose conduct has been under investigation for several weeks, shall be impeached. No formal announcement has been made, and no further elucidation has been given of the testimony which was taken at the hearings, but it is understood that the specifications will allege that the judge exercised influence with railways in connection with purchases of culm, and that he personally profited by the transactions.

The board of arbitration chosen to consider the demands of the enginemen of the eastern roads expects to hold its first hearing on July 15. The board will meet this week to organize. B. A. Worthington, who has taken a chief part in the preparation of the case of the railways, has been elected president of the Chicago & Alton, but it is not believed that this will prevent him from appearing for the roads before the committee and presenting their case. The committee of managers of the eastern railways will meet representatives of their firemen on Monday, July 1.

H. J. Slifer, general manager of the Chicago Great Western, has issued a circular to enginemen, maintenance of way men and station employees, asking their co-operation to prevent the killing of animals on the right-of-way. Last year, he says, the Great Western spent an average of $49 a day in settlement of claims for livestock killed on the right-of-way, or a total of $18,028.84, which was absolutely wasted. The circular points out that enginemen may do much to reduce the amount of such payments by the exercise of care; maintenance of way men by seeing that cattle guards, fences and gates are kept in good condition, and station employees by notifying farmers or section foremen of any carelessness on their part.

Illinois Central "Graft" Cases Non-Suited.

The suits against four former officers of the Illinois Central, Frank B. Harriman, Charles L. Ewing, John M. Taylor and Joseph E. Buker, charged with conspiracy to defraud the road out of about $1,500,000 in the famous car repair graft case, were non-suited in the criminal court at Chicago on June 24, on the motion of Assistant State's Attorney John E. Northup, because of inability to secure the presence of three indispensable witnesses. A motion that the cases be stricken off the record with leave to reinstate had been denied by the court on June 22. The cases have been pending for over nineteen months during which time civil suits to collect damages were settled out of court.

Don'ts for Local Freight Conductors.

Don't try to unload merchandise onto platform from two or three peddler cars at the same time when there is only one man to check it.

Don't carry small shipments by small stations with the intention of returning them the following day; it may be important to the consignee and might be overlooked the following day.

Don't run by pickup loads at the small stations because the agent doesn't raise a howl about it; he knows he is in the minority.

Don't tell the agent that he is having unnecessary work done when he gives you a switch list; remember he is the general manager at his station and is held responsible for securing business and taking care of patrons.

Don't fail to see that merchandise is properly broken down in peddler cars where cars break bulk, and at each subsequent unloading point; claims and losses to the company result from neglect of this.

Remember co-operation means harmony; courtesy means increased business; additional business means greater revenues. Let's all pull together.—*Rock Island Employees' Magazine.*

An Incident of State Railway Operation.

The Assembly of Notables in Saxony has lately had to tackle the question of prices of beer in the railway restaurants. In 1909 these were fixed at 3.6 cents for 0.35 of a liter (a liter is a little less than a quart), and 2.4 cents for one-fifth of a liter —this for beer brewed in Saxony, and called "Pilsen" beer; the genuine Pilsen beer coming from Bohemia. Now the Saxon

brewers asked that these prices be raised to 4.8 cents for two-fifths of a liter (say a schooner), and 3.6 cents for a quarter of a liter. They complain of glaring injustice, because the restaurants are permitted to charge such prices for genuine Bohemian beer that they make $2.38 cents more on a keg than when they sell Saxon beer. The official answer to this request is that the restaurants ought to make more on Bohemian beer, because they have to pay more for it. Suppose a carload of it spoils on their hands; they lose 65 per cent. more than if it had been Saxon beer. And they don't sell so much Bohemian as Saxon, because the Bohemian is dearer. The railway restaurants took 6,843 kegs of "echt Bömisch" in 1910, and 14,616 kegs of the cheaper Saxon. Moreover, should the railway restaurants raise their prices for Saxon beer, what would be the result? The thirsty would just step across the street and quench their thirst at a lower price, or worse, they would avoid Saxon beer entirely and drink genuine Bohemian, which then would be but little dearer. The request of the petitioners was therefore refused, only once vote being in its favor.

Respectfully referred to the Interstate Commerce Commission.

President Finley Urges Compulsory Arbitration.

In my opinion, the time has now arrived for the adoption of a well-devised system of arbitration in labor controversies, not only because of the public interest in the avoidance of strikes and the interruption of transportation service, but also because, as indicated by Judge Prouty, we are face to face with a situation which may bring the relation of the wages of railway employees and charges for transportation service before governmental tribunals.

If arbitration is to be a sure and effective means of preventing strikes and the interruption of service resort to it must be compulsory. If it is to do substantial justice to both sides and is to be the method of satisfying governmental tribunals that, as Judge Prouty says, the wages are necessarily and properly paid, provision should be made for the creation of a board of arbitrators composed of men who would become experts in their duties and who would base their decisions upon the economic considerations involved.

The desirability of the inauguration of such a system is illustrated by a wage controversy now pending in which a class of employees on certain railways asked for substantial increases in wages. The companies affected declined to accede to the demand, one of the reasons assigned being that the revenues of the roads were not sufficient to justify the payment of the increased wages. That the matter will be intelligently and comprehensively determined is indicated by the means adopted for arriving at a conclusion.

The adoption of a policy of settling labor disputes by a well-devised system of arbitration is but a logical outgrowth of our present system of railway regulation, for a railway, just as any other business enterprise, must be managed in accordance with sound business principles. If it is to be permanently successful and if it is to be able adequately to perform its function of transportation, its earnings from operation must be sufficient to pay all operating costs and yield a return to its owners at approximately the rate that may be earned on other investments of the same grade. If, as a result of compliance with the requirements of legislative regulation or of any other causes not under the control of the management, operating expenses should be so increased as to bear an uneconomic relation to earnings, not only the railway, but its employees and the public would suffer.—*From an address by W. W. Finley, president Southern Railway, to the graduating class of Wofford College, Spartanburg, S. C., June* 10.

Improvements at North Philadelphia.

The Pennsylvania Railroad has let contracts for the work of making extensive changes at North Philadelphia by which four passenger trains, two eastbound and two westbound, can receive or discharge passengers there at the same time, while the industrial freight tracks east and west of the station will be made continuous, thus converting this section into an eight-track railway. The improvements will cost about $1,000,000.

There will be two eastbound and two westbound passenger tracks, with island platforms between. Three new tracks will be built north of the present tracks and one on the south. This last will occupy the place now used as the eastbound passenger platform. The passenger house (on the south side) stands well back, and will not have to be moved. The two center tracks of the eight will be for through freight. Outside of the passenger tracks will be two industrials tracks, one on the north and one on the south side. This part of the New York division is li...d with an almost continuous industrial track for several miles, on one side or the other, and much of the way on both sides.

Looking west, the arrangement of the tracks will be as indicated by the letters (F for freight and P for passenger) in the subjoined sketch. The horizontal rules between the two pairs of passenger tracks represent the island platforms. These will have sheds with flat roofs.

F P ——— P F F P ——— P F

There will be two new waiting rooms 10 ft. x 60 ft. in the eastbound island platform, and one 10 ft. x 80 ft. on the westbound island platform. Each platform will accommodate a 12-car train on each side.

In the station the ticket office and retiring rooms for men and women will be enlarged, while much more space for baggage will be provided by moving the baggage room to the basement. Leading from the station under the tracks will be a passenger tunnel from which there will be two sets of stairways to each platform. This tunnel will extend out to the driveway on the north side of the tracks, which is about 12 ft. below track level, where there will be an ornamental carriage and automobile entrance. Work on this driveway has already begun.

Broad street crosses beneath the tracks just east of the station. There will be walks on each side of the railway, the station leading from Broad street direct to the passenger tunnel so that passengers not having to buy tickets need not pass through the station building. There will be a separate tunnel with elevators, for baggage. Over Broad street a new eight-track steel and concrete bridge will be built. The three rows of pillars under the present bridge will be done away with, and a single row substituted in the middle of the street. It is expected that the improvements will be completed in about a year.

Per Cent. of Expenses: 92.5.

There having been charges that the Chinese Eastern Railway—that is, the extension of the Siberian railway across Manchuria to Vladivostok, with the branch towards Port Arthur—was being robbed by its officers and employees, a Russian journal defends it, and in the course of the defence cites the earnings and expenses for three years, as follows:

	1908.	1909.	1910.
Gross earnings	$7,585,000	$7,895,000	$8,927,000
Working expenses	9,494,000	8,359,000	8,256,000
Net earnings	.....	.....	$671,000
Deficit	$1,909,000	$464,000	.....

The gross earnings are surprisingly large for 1,088 miles of railway, but the expenses are not such as one would expect to be cited as proof of economical management. To spend $26,109,000 in order to earn $24,407,000 in the course of three years is not the way to boom Chinese Eastern stock, and in the late "profitable" year, the expenses were still 92½ per cent. of the receipts, and the net was but $617 per mile.

The amount of freight going to Dairen (formerly Dalny) is about twice as great as that going to Vladivostok, which seems natural, as Vladivostok is far north of the great populations served by the railway. The quantities in 1910, when they were much greater than ever before, were 1,357,620 tons to Dairen and 784,080 to Vladivostok. There are important coal mines on the Japanese part of the Chinese Eastern, the product of which must go largely to Dairen.

North Western Organizes Smoke Department.

The Chicago & North Western has announced the appointment of a central smoke inspection organization which will make a determined fight to eliminate the smoke nuisance in the Chicago district. The department will work in conjunction with the smoke inspection department of the city and will have no other duty than to see that locomotives and shops are

operated with the maximum efficiency of fuel and the minimum of smoke. C. W. Corning has been placed at the head of the new department, with the title of chief smoke inspector, in charge of all territory within the limits of Chicago, and by division of territory special attention will be given to every part of the company's lines in the Chicago district. J. J. O'Connor is appointed smoke inspector, with jurisdiction over the Chicago shops and the Fortieth street yards; T. Thomas, smoke inspector in charge of the Galena division from California avenue to the Chicago passenger terminal; J. H. Oliver, day smoke inspector at the Chicago terminal station, and C. E. Robbins, night smoke inspector, with the same jurisdiction. W. B. Sievers has been appointed smoke inspector at the Wood street roundhouse and yard, and J. Ellis, smoke inspector for the Wisconsin division. The duties of these men will be to ride on locomotives instructing enginemen and firemen in their duties, and by education and discipline, when necessary, do everything possible to reduce the smoke nuisance to a minimum.

A Car Record for Shippers and Consignees.

That a merchant or manufacturer, receiving (or sending) large quantities of freight in carloads, ought to keep an accurate record of the movements of the cars, especially where such cars are unloaded on his private tracks, would seem to be an elementary proposition in the interest of good business; for the demurrage on such cars, when they are not promptly unloaded, is likely to amount to a considerable sum, and disagreements with the railways concerning the accuracy or justice of demurrage bills often hinge on differences of testimony or of opinion as to the date and hour on which a given car was received or was made empty. Appreciating these considerations, and seeing the desirability of a systematic record, J. E. Challenger, of Philadelphia, formerly and for about 20 years manager of the Philadelphia Car Demurrage Bureau, has prepared a "car demurrage record book," which he is selling to shippers and consignees, and for which he has already received orders from many large business establishments. He makes books of 50 pages each, with room for records of 25 cars on a page, and also provides loose sheets, to be put into binders, for establishments where the number of cars is so great that a 50-page book would be quickly used up. The book has 11 headings, besides the file number and the column for remarks, and these headings are subdivided so as to make 37 columns, as follows:

Shipped from—
- Station.
- Railway.
- Date

Car—
- Initial.
- Number
- Kind.

Weights, Rates, Route, etc.—
- (Five columns.)

Contents—

Notice Received—
- Arrival, date.
- Arrival, hour.
- Placing, date.
- Placing, hour.

Disposition order given—
- If mailed, where?
- If delivered, to whom?
- By whom mailed or delivered?
- Date.
- Hour.

Placed—
- Constructively, date.
- Constructively, hour.
- Actually, date.
- Actually, hour.

Released—
- Date.
- Hour.

Number of days debited—
- Up to 7 days inclusive, box cars.
- ——— other cars.
- In excess of 7 days, box cars.
- ——— other cars.
- Total, box cars.
- ——— other cars.

Number of days credited—
- Box cars.
- Other cars.

Amount charged—

The book also contains a page on which to record the weather, for a year or more, there being 31 columns on a page, one for each day of the month. Each book also contains the uniform code of demurrage rules, supplemented by numerous explanations and interpretations, edited by Mr. Challenger, for the benefit of shippers and consignees. Mr. Challenger says that he has no intention of establishing anything like a claim agency; but he promises the buyers of his books that he will keep them promptly advised of all changes in the demurrage rules, and also will freely give advice on any obscure questions which may arise and which they may present to him.

Safety Committees for the Western Indiana.

The Chicago & Western Indiana and the Belt Railway of Chicago have recently organized safety committees, following the plan that has been put into effect on many other roads, but with a slightly different method of organization. The safety committee plan was explained at a mass meeting of the employees by officers of the company and the members of the central safety committee were nominated and elected directly by the employees. The central safety committee consists of the following: C. G. Austin, general attorney, chairman; E. H. Lee, chief engineer; R. W. Stevens, superintendent; F. E. Jacob, signal engineer; E. L. Pollock, purchasing agent; G. M. Grimes, claim agent, and L. M. Betts, car accountant, who is secretary of the committee. The plan also includes five district committees, also elected directly by the employees, except that the chairmen were appointed by the central committee, and they comprise a division committee. The lines of the Western Indiana and of the Belt were divided into five districts, and the district committees were elected by ballot by members of the various crafts, according to a plan which insured that the different crafts would be properly represented on the committees. The district and the division committees will hold meetings once a month and make recommendations to the central committee which will also meet once a month following the meetings of the other committees. An attractive button is being prepared to be worn by members of the committee. It will be in the form of the company's trade mark, and will contain the motto "Safety Always First."

Express Train Speeds in Germany.

German trains usually run on schedule time. The new summer time table for the state railways shows some advances in speed in through trains. The fastest train in Germany is the so-called "D-Zug 20" between Berlin and Hamburg, which maintains an average speed of 55.2 miles an hour. This throws into second place the express from Munich to Nuremberg (leaving Munich at 8:15 a. m.), which heretofore has been the fastest train in Germany, with an average speed of 55 miles an hour. In the third place is an express train from Berlin to Halle, with an average speed of 54.9 miles an hour, and the fourth place is held by the express from Freiburg to Appenweier, in Baden, with an average speed of 52.9 miles an hour.

For covering long distances without stop the record is held by the Munich-Berlin express for the run between Nuremberg and Halle, a distance of 195.11 miles, which is covered without stop at an average speed of 43.19 miles an hour, in spite of the heavy grades in crossing the Thuringian Mountains. Other long runs without stop are Berlin to Hamburg, 178 miles, at an average speed of 55.18 miles an hour; Munich to Wurzburg, 172.12 miles, at 50.33 miles an hour; Berlin to Hanover, 157.83 miles, at 50.39 miles an hour; Schneidemuehl to Berlin, 153.48 miles, at 50.46 miles an hour; and Breslau to Frankfort on the Oder, 154.10 miles, at 50.77 miles an hour.

The Berlin-Hanover-Dortmund express covers 292.04 miles with but three stops, at an average speed of 50.52 miles an hour; the Oderberg-Breslau-Berlin express, 316.90 miles, with four stops, at 50.14 miles an hour; the Berlin-Konigsberg express, 366.61 miles with three stops, at 49.70 miles an hour; the Munich-Berlin express, 419.42 miles with two stops, at 48.78 miles an hour, the Berlin-Frankfort-on-the-Main express, 334.92 miles with five stops, at 48.50 miles an hour; the Munich-Wurzburg-Frankfort-on-the-Main express, 256 miles with four stops, at 47.04 miles an hour; the Berlin-Hof-Munich express, 407 miles with four stops, at 44.93 miles an hour.—*Consular Reports.*

Treatment of Immigrants.

The Passenger Index, a publication of the passenger department of the Illinois Central, recently contained the following appeal to employees on the treatment of immigrants:

"Just a word in connection with the care of the immigrant. In round numbers, 1,040,000 were admitted into the United States through our various ports during the year ending June 30, 1910. As their first impressions of this country and its methods are likely to be lasting ones, and as on landing most of them come in immediate contact with the railway fraternity, in journeying to their new-found homes, square treatment and a kindly interest, as agents in molding a reciprocal regard for our rights, may return to us a hundred fold at some future time when the employees of now shall have then become the officers.

"Then too, looking further ahead, most of these immigrants, as naturalized citizens, will one day raise a voice in our governmental affairs, and as representatives, seated in our legislative halls, will assist in shaping measures from their view-

points based, perhaps, on these same first impressions. They will contribute to our art, science and literature, and aid in and even promote our commercial enterprises, as useful and influential citizens.

"It behooves us, therefore, thinking ahead to treat them right."

Another View of the Car Shortage Problem.

The Texas railways are taking great care not to underestimate the peach and tomato crop this season. They know that the crop will be an enormous one and are bending every effort to provide cars enough to handle it. It is well known that if there is a car shortage the producers will take advantage of it to collect claims from the companies. It is said to be an old trick in farming districts to have the railways underestimate the crops. This makes it possible to ship only a limited amount, and thus the prices are kept high, while if the entire yield is shipped the prices are likely to be low. Therefore by causing the railways to underestimate the crops they are able to keep prices up on what is shipped and to collect damages from the transportation companies on what is not shipped, alleging the railways failed to furnish the cars. The roads have fallen a victim of this game in the past, and now great precaution is being taken to get a correct estimate of the yield.—*From the Houston Post.*

The President of a Weak Railway.

He comes to his Wall Street office in an absent state of mind, thinking of $7,500,000 5 per cent. three-year notes coming due on the 15th, and his office is full of men from down the line. They expect to be called by their right names. They are not smoking; they expect that to be noticed. The president passes out his worst cigars, which are better than his visitors ever smoke outside of his office, and asks them "How?" . . . They are a delegation from a stub-end of the line. Two or three dozen peach trees have been planted twenty miles back in the country, and they want the president to come up there with his railway.

He has to seem pleased. He is thinking of $7,500,000 notes, which must be paid off to keep the road in a condition of tentative solvency, but he has been going to and fro among these people, promising them new mileage if they would stop legislating against railways, his particularly, and it is necessary to propitiate them.

"Money's pretty tight," he ventures.

"Can't tell us anything new," says the head of the delegation. "Ain't money always tight? Them speculators down here can git all they want. We want that piece of road. Going to have an election next fall. Some of your old friends want to git into office again. They'll make it hot for you if they do."

He promises them the road. He will have a man go right to work on it, estimating the cost, the probable revenue, etc., and send a surveyor.

"We know what that means," says the head of the delegation. "We ain't come fifteen hundred miles for promises. We want that road. Now, when?"

If necessary, the president would promise it a week from Tuesday, all nickel plated and equipped. He does promise it to be done by the end of the year, and before the delegation can tie it any tighter he takes it on its weak human side.

"You didn't come fifteen hundred miles only for that," he says. "You must have wanted to see the town."

He presses the button; one of the most useful men on the railway's pay roll is summoned. "Take these friends and show them New York," he says. "Show it to them right."

In a few minutes he is rid of them. As he sits down to solve the $7,500,000 note problem his desk telephone rings, and his secretary outside says: "There's a man here from one of the news bureaus. Wants to know what makes our stock so weak, and if we are going to pay off those notes?" . . . —*New York Evening Post.*

American Road Congress.

At the American Road Congress to be held next fall the United States Department of Agriculture will present an interesting exhibit under the charge of Director Logan Waller Page, of the office of public roads, showing the government's work on the public roads of the country, and how unimproved roads injure the farmer and how improved roads benefit not only the farmer but also the consumer. The American Road Builders' Association, the American Association for Highway Improvement, the American Automobile Association and the National Association of Road Material & Machinery Manufacturers will consolidate to make this congress a success.

American Reporters for International Railway Congress.

The permanent commission of the International Railway Congress, which will hold its next meeting at Berlin in 1915, has, on the recommendation of the American members of the commission, designated the following as the American reporters on the subjects mentioned:

	Subjects.	Reporters.
	First Section.	
I.	Method of construction of roadbed and track, etc.	H. U. Mudge, President, Rock Island Lines.
II.	Study of maintenance and supervision of track.	Epes Randolph, President, Southern Pacific in Mexico.
III.	Special Steels.	W. C. Cushing, C. E. M. of W., Pennsylvania Lines.
IV.	Reinforced Concrete.	C. H. Cartlidge, Bridge Engr., C. B. & Q. R. R.
	Second Section.	
VII.	Passenger Equipment.	B. F. Bush, President, Missouri Pacific Ry.
VIII.	Electric Traction.	Horace G. Burt, Chief Engr., Chicago Committee of Investigation on Electrification of Railway Terminals.
	Third Section.	
IX.	Passenger Terminals.	F. A. Delano, Receiver, Wabash Railroad.
X.	Freight Terminals.	W. S. Kinnear, President, Kansas City Terminal Co.
	Fourth Section.	
XIII.	The relation of cost of service to rates.	Fairfax Harrison, President, C. I. & L. Ry.
XV.	Interchange of equipment and demurrage charges.	Arthur Hale, General Agent, American Railway Association.
XVI.	Workmen's Dwellings.	A. F. Banks, President, E. J. & E. Ry.
	Fifth Section.	
XIX.	Special types of traction units for branch lines.	H. B. Spencer, Vice-President, Southern Ry.

The American members of the permanent commission made an especial effort to get the higher officers of the railways of this country to take assignments as reporters, and it will be noted from the above list that they were very successful. The papers of the reporters will be prepared in 1914.

The American members of the permanent commission of the Congress are the following:

W. F. Allen, general secretary, American Railway Association; E. P. Ripley, president, A. T. & S. F.; Theodore N. Ely, Bryn Mawr, Pa.; Fairfax Harrison, president, C. I. & L.; Charles M. Hays (deceased), president, Grand Trunk; Franklin K. Lane, Interstate Commerce Commission; L. F. Loree, president, Delaware & Hudson; G. W. Stevens, president, C. & O.; Stuyvesant Fish, 52 Wall street; W. W. Finley, president, Southern Railway.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Convention, May, 1913, St. Louis, Mo.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Boston, Mass.

AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—W. C. Hope, New York; next convention, September 12, Seattle, Wash.

AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, East St. Louis, Ill.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—W. C. Cooder, Carew building, Cincinnati, Ohio; 3d Friday of March and September.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—H. C. Donecker, 29 W. 39th St., New York. Convention, October 7-11, Chicago.

AMERICAN ELECTRICAL RAILWAY MANUFACTURERS' ASSOC.—George Keegan, 165 Broadway, New York. Meetings with Am. Elec. Ry. Assoc.

AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York; annual, November 20, 1912, Chicago.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Convention, 3d week in Oct., Baltimore, Md.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 1011 S. Michigan Ave., Chicago. Convention, March 18-20, 1913, Chicago.

AMERICAN RAILWAY MASTER MECHANICS' ASSOC.—J. W. Taylor, Old Colony building, Chicago.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—M. H. Bray, N. Y. N. H. & H., New Haven, Conn. Convention, July 9, Chicago.

AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.; annual, June, 1913.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., New York; 1st and 3d Wed., except June and August, New York.

AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—J. R. Wemlinger, 13 Park Row, New York; 2d Tuesday of each month, New York.

American Society of Mechanical Engineers.—Calvin W. Rice, 29 W. 39th St., New York.

American Wood Preservers' Association.—F. J. Angier, B. & O., Baltimore, Md. Convention, 3d week in January, 1913, Chicago.

Association of American Railway Accounting Officers.—C. G. Phillips, 143 Dearborn St., Chicago.

Association of Railway Claim Agents.—J. R. McSherry, C. & E. I., Chicago.

Association of Railway Electrical Engineers.—Jos. A. Andreucetti, C. & N. W. Ry., Chicago; annual, October 21-25, Chicago.

Association of Railway Telegraph Superintendents.—P. W. Drew, 112 West Adams St., Chicago; annual, May 20, 1913, St. Louis, Mo.

Association of Transportation and Car Accounting Officers.—G. P. Conard, 75 Church St., New York.

Canadian Railway Club.—James Powell, Grand Trunk Ry., Montreal, Que.; 2d Tuesday in month, except June, July and Aug., Montreal.

Canadian Society of Civil Engineers.—Clement H. McLeod, 413 Dorchester St., Montreal, Que.; Thursdays, Montreal.

Car Foremen's Association of Chicago.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month, Chicago.

Central Railway Club.—H. D. Vought, 95 Liberty St., New York; 2d Thurs. in Jan. and 2d Fri. in March, May, Sept., Nov., Buffalo, N. Y.

Civil Engineers' Society of St. Paul.—L. S. Pomeroy, Old State Capitol building, St. Paul, Minn.; 2d Monday, except June, July, August and September, St. Paul.

Engineers' Society of Pennsylvania.—E. R. Dasher, Box 704, Harrisburg, Pa.; 1st Monday after 2d Saturday, Harrisburg, Pa.

Engineers' Society of Western Pennsylvania.—E. K. Hiles, 803 Fulton building, Pittsburgh; 1st and 3d Tuesday, Pittsburgh, Pa.

Freight Claim Association.—Warren P. Taylor, Richmond, Va.

General Superintendents' Association of Chicago.—E. S. Koller, 226 W. Adams St., Chicago; Wed. preceding 3d Thurs., Chicago.

International Railway Congress.—Executive Committee, 11, rue de Louvain, Brussels, Belgium. Convention, 1915, Berlin.

International Railway Fuel Association.—C. G. Hall, 922 McCormick building, Chicago.

International Railway General Foremen's Association.—L. H. Bryan, Brown Marx building, Birmingham, Ala. Convention, July 23-26, Chicago.

International Railroad Master Blacksmiths' Association.—A. L. Woodworth, Lima, Ohio. Convention, August 20, Chicago.

Master Boiler Makers' Association.—Harry D. Vought, 95 Liberty St., New York. Convention, May, 1913, Chicago.

Master Car Builders' Association.—J. W. Taylor, Old Colony building, Chicago.

Master Car and Locomotive Painters' Assoc. of U. S. and Canada.—A. P. Dane, B. & M., Reading, Mass. Convention, September 10-13, Denver, Col.

National Railway Appliances Assoc.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Meetings with Am. Ry. Eng. Assoc.

New England Railroad Club.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, except June, July, Aug. and Sept., Boston.

New York Railroad Club.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August, New York.

Northern Railroad Club.—C. L. Kennedy, C. M. & St. P., Duluth, Minn.; 4th Saturday, Duluth.

Peoria Association of Railroad Officers.—M. W. Rotchford, Union Station, Peoria, Ill.; 2d Tuesday.

Railroad Club of Kansas City.—C. Manlove, 1008 Walnut St., Kansas City, Mo.; 3d Friday in month, Kansas City.

Railway Business Association.—Frank W. Noxon, 2 Rector St., New York; annual, November 20, 1912, New York.

Railway Club of Pittsburgh.—J. B. Anderson, Penna. R. R., Pittsburgh, Pa.; 4th Friday in month, except June, July and August, Pittsburgh.

Railway Electrical Supply Manufacturers' Assoc.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Assoc. Ry. Elec. Engrs.

Railway Gardening Association.—J. S. Butterfield, Lee's Summit, Mo.; next meeting, August 13-16, Roanoke, Va.

Railway Development Association.—W. Nicholson, Kansas City Southern, Kansas City, Mo. Next meeting, Nov. 17, 1912, Cincinnati, Ohio.

Railway Signal Association.—C. C. Rosenberg, Bethlehem, Pa. Convention, Oct. 8-11, Quebec.

Railway Storekeepers' Association.—J. P. Murphy, Box C, Collinwood, Ohio.

Railway Supply Manufacturers' Assoc.—J. D. Conway, 2135 Oliver bldg., Pittsburgh, Pa. Meetings with M. M. and M. C. B. assocs.

Railway Tel. & Tel. Appliance Assoc.—W. E. Harkness, 284 Pearl St., New York. Meetings with Assoc. of Ry. Teleg. Sups.

Richmond Railroad Club.—F. O. Robinson, Richmond, Va.; 2d Monday, except June, July and August.

Roadmasters' and Maintenance of Way Association.—L. C. Ryan, C. & N. W., Sterling, Ill. September 10-13, Buffalo, N. Y.

St. Louis Railway Club.—B. W. Fraumenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug., St. Louis.

Signal Appliance Association.—F. W. Edmonds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

Society of Railway Financial Officers.—C. Niquist, La Salle St. Station, Chicago.

Southern Association of Car Service Officers.—E. W. Sandwich, A. & W. P. Ry., Montgomery, Ala.; annual, Oct. 17, Atlanta, Ga.

Southern & Southwestern Railway Club.—A. J. Merrill, Grant bldg., Atlanta, Ga.; 3d Thurs., Jan., March, May, July, Sept., Nov., Atlanta.

Toledo Transportation Club.—J. G. Macomber, Woolson Spice Co., Toledo, Ohio; 1st Saturday, Toledo.

Traffic Club of Chicago.—Guy S. McCabe, La Salle Hotel, Chicago; meetings monthly, Chicago.

Traffic Club of New York.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August, New York.

Traffic Club of Pittsburgh.—D. L. Wells, Erie, Pittsburgh, Pa.; meetings monthly, Pittsburgh.

Train Despatchers' Association of America.—J. F. Mackie, 7042 Stewart Ave., Chicago.

Transportation Club of Buffalo.—J. M. Sells, Buffalo; first Saturday after first Wednesday.

Transportation Club of Detroit.—W. R. Hurley, L. S. & M. S., Detroit, Mich.; meetings monthly.

Traveling Engineers' Association.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y.; annual, Aug. 27-30, Chicago.

Western Canada Railway Club.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man.; 2d Monday, except June, July and August, Winnipeg.

Western Railway Club.—J. W. Taylor, Old Colony building, Chicago; 3d Tuesday of each month, except June, July and August.

Western Society of Engineers.—J. H. Warder, 1735 Monadnock Block, Chicago; 1st Monday in month, except July and August, Chicago.

Traffic News.

The Munson Steamship Line announces that, beginning September 11, steamers will sail regularly from Mobile, every four weeks, to Montevideo, Buenos Ayres and other South American ports.

Passenger officers of the principal western railways have called a meeting, to be held in the Transportation building, Chicago, on June 28, with a view to forming a permanent organization of a "See America First" campaign.

Representatives of local shippers' traffic bureaus in various cities of the Southwest have formed an organization to be known as the Four-State Traffic League, to discuss traffic questions affecting the states of Texas, Louisiana, Arkansas and Oklahoma.

The Richelieu & Ontario Navigation Company has absorbed the Niagara Navigation Company, the Thousand Island Steamboat Company and the St. Lawrence River Steamboat Company; and the authority of Thomas Henry, traffic manager, Montreal, has been extended over these lines.

Thomas Marshall, hitherto chairman of the Canadian Freight Association, has resigned to become the head of the newly established traffic department of the Toronto Board of Trade. Mr. Marshall has been connected with Canadian railways for many years, and for seven years, until recently, was secretary of the Canadian Freight Association.

The freight department of the Lehigh & New England announces that the extension of the road to Tamaqua, Pa., 33 miles westward from Danielsville, will be opened for business July 8; and at the same time the company will begin running trains through to Lansford, Hauto and Summit Hill, on the line of the Lehigh Coal & Navigation Company, having made a contract for running rights over the L. C. & N. tracks.

At a conference of traffic officials of the southern and southwestern lines at St. Louis last week, it was decided to re-establish through rates on lumber with the 41 tap lines named by the Interstate Commerce Commission as entitled to allowances for divisions, effective about July 1. All through rates with the tap lines were canceled on April 30, following the announcement of the commission's original decision.

New passenger schedules between Chicago, Denver and the Pacific coast have been arranged by the Union Pacific, the Chicago & North Western and the Chicago, Milwaukee & St. Paul. to become effective about June 30. For several years some of the trains on the Union Pacific west of Omaha have been made up from trains on the North Western and the St. Paul, due to arrive at Omaha from the east at the same time and consolidated at that point into one westbound train. Likewise a single eastbound train on the Union Pacific has been split up at Omaha and divided between the North Western and the St. Paul for Chicago. This occasionally resulted in inconvenience and delay to passengers, because whenever a train on either line was late the passengers on the other road had to wait at Omaha for the connection. Under the new arrangement both the St. Paul and the North Western will have their own exclusive through trains in each direction. A statement issued by the North Western says: "This announcement of definite service disposes of the gossip which has been exploited from time to time that there was dissension existing between the North Western and the Union Pacific. On the contrary, it will be seen that this arrangement really ties the two companies closer together, and will permit of exclusive North Western trains with exclusive North Western equipment in both directions between Chicago, Denver, San Francisco, Los Angeles and Portland." The North Western will retain for its service the present Overland Limited, the Los Angeles and Portland Limited and the Denver Special, in addition to its two fast mail trains in connection with the Union Pacific and an exclusive fast express (parcels) train. The St. Paul will put in service on June 30 a Denver-Portland train, leaving Chicago at 10 a. m., arriving at Denver at 1:15 p. m. the next day and at Portland at 12:45 p. m. the third day. Later it will put in service a through train for San Francisco and Los Angeles to be known as the Pacific Limited, leaving Chicago at 10:45 a. m.

Cost of Travel in Europe.

I should like to correct an impression which I find prevails in regard to the cheapness of traveling in Europe.

I have been traveling with two others for over three months this year in Italy, Austria, Germany and France. My experience is that traveling first class on the railways and stopping at the best hotels in the countries named is quite as expensive as in the United States, and in fact is not as comfortable at the same price as in the United States.—*Correspondent N. Y. Evening Post.*

INTERSTATE COMMERCE COMMISSION.

The commission has suspended until October 29 a tariff showing increases in rates for the transportation of pig iron from Duluth and other points to Omaha, Kansas City and other points in that region.

The commission has suspended until December 28 tariffs filed by the southwestern railways making an increase of about 10 per cent. in the freight charges on cotton seed products from points in Oklahoma to places in Texas and other states.

The commission has further suspended from June 25 to December 25, 1912, the advances in the rates on empty barrels, in carloads, from sixth to fifth class, and in less than carloads, from fourth to third class, in Southern classification territory.

The Beaumont (Tex.) Chamber of Commerce has filed a complaint with the Interstate Commerce Commission attacking the regulations of the Texas & Pacific and International & Great Northern governing the milling-in-transit rate on rice as discriminatory against all mills not located on the lines of the defendants.

The commission has vacated its suspension of the transcontinental class tariffs to Pacific coast terminals. The new tariffs, therefore, became effective June 15, or at the same time as the Spokane compromise rates. The new transcontinental tariffs change the $3 blanket scale to $3.70 from New York pier, $3.60 from New England, $3.50 from New York, $3.40 from Chicago, $3.30 from the Mississippi river, $3 from the Missouri river, and $2.60 from Colorado points on first class.

Rates on Cement Reasonable.

Ashgrove Lime & Portland Cement Co. et al. v. Atchison, Topeka & Santa Fe et al. Opinion by Commisisoner Clements:

Defendants give the same rates to all points in the so-called "gas belt" south to Dewey, Okla., on northbound traffic in cement and north to Kansas City on shipments to Texas. Certain cement mills at Iola, Kans., and immediate vicinity complain that their rates on cement to Kansas City and to various points in the states of Missouri, Iowa, Nebraska, Colorado, South Dakota, Montana, Oklahoma, and Texas are unreasonable and unjustly discriminatory. While on a strict per-ton-mile basis, computed from these particular mills, certain of these rates may seem rather high, considering the record as a whole, the complaints should be dismissed except as to Oklahoma, where certain reductions are made to place Oklahoma on a substantial parity with other cement rates in this general territory allowed to stand. (23 I. C. C., 519.)

Complaint Dismissed.

John W. Boileau et al v. Pittsburgh & Lake Erie. Opinion by Commissioner Meyer:

The decision in 22 I. C. C., 640, ordered a reduction from 88 cents per ton to 78 cents per ton in the lake-coal rate from the Pittsburgh district to Ashtabula, Ohio. The complainant now seeks a further reduction in the same rate. The evidence is not conclusive and the complaint is dismissed. (24 I. C. C., 129.)

Businessmen's League of Alberta Lea, Minn. v. Baltimore & Ohio et al. Opinion by Commissioner McChord:

The complainant seeks to have applied to Albert Lea the Minneapolis-St. Paul class rates, all-rail, from the Atlantic seaboard. Traffic to Albert Lea from points east of Buffalo and Pittsburgh now takes differentials over Minneapolis and St. Paul, both all-rail and rail-lake-and-rail. The commission found that the Twin City rates are a result of competition by Canadian roads, and that none of the conditions affecting the Twin City rates obtains at Albert Lea. The complaint was dismissed. (24 I. C. C., 125.)

Coal Rates to Nassau, Ill., Reduced.

Crescent Coal & Mining Co. v. Chicago & Eastern Illinois et al. Opinion by the commission:

The complainant charges that on shipments of coal from points in Indiana to Nassau, Ill., it was charged the local rate to Depue, Ill., when it should have been charged the proportional rate to Depue, as Nassau is beyond that point. The commission found that the proportional rate to Depue should have been charged by the defendant, as that rate was the lawfully effective rate applicable to the shipments to Nassau. Reparation will be awarded upon proof of the amount due on interstate shipments. (24 I. C. C., 149.)

Not a Tap Line.

McCloud River Lumber Co. v. Southern Pacific et al. Opinion by Commissioner Clark:

The McCloud River Railroad, although owned by complainant is a common carrier and a member of the American Railway Association.

Complainant is entitled to through routes and joint rates on lumber in carloads from McCloud, Cal., to the eastern destinations to which the coast group rates apply, but such rates should not exceed the coast group rates by more than 1½ cents per 100 lbs. (24 I. C. C., 89.)

New Roads, La., Discriminated Against.

New Roads Oil Mill & Manufacturing Co., Ltd., v. St. Louis, Iron Mountain & Southern et al. Opinion by Commissioner Clements:

The complainant alleges that there are no joint rates between the carriers on cotton seed from Arkansas points of production on the defendant's line to New Roads, La., and that the combination of rates now in effect results in an aggregate charge which is unreasonable, and results in a discrimination against New Roads in favor of St. Louis, East St. Louis and certain other points. The commission found that these rates were unreasonable and unjustly discriminatory and prescribed certain rates for the future. Reparation was denied. (24 I. C. C., 167.)

Glucose Rates Reduced.

State of Iowa et al v. Atlantic Coast Line et al. Opinion by Commissioner Harlan:

The complainant charges that the export and domestic rates of 22½ cents and 25 cents per 100 lbs., respectively, on glucose from Chicago to New York are excessive. The commission found that the present rate adjustment enabled certain glucose manufacturers to place their product on certain markets at a certain lower cost than was possible to other manufacturers. This resulted from the lower rate on corn from which glucose is made. The manufacturer who had his plants near the markets and transported the corn to those plants had a decided advantage over the manufacturer who had to ship the glucose from his plant to a distant market. To overcome this advantage to certain manufacturers the commission reduced the export rate from Chicago to New York to 18 cents per 100 lbs., and the domestic rate to 20 cents. The complainant sought to have the same rates applied to glucose as were applied to corn, but the commission found that a manufactured product is not entitled as a matter of right to the rate on the raw material from which it is made. Attention was called to certain irregularities and unlawful practices of certain manufacturers of glucose and syrup in the use of milling-in-transit privileges. (24 I. C. C., 134.)

Through Routes and Joint Rates on Lumber Restored.

Beaumont & Great Northern v. Atchison, Topeka & Santa Fe et al. Opinion by Commissioner Harlan:

The complainant seeks the restoration of the through routes and joint rates on lumber and other forest products from points

on its lines which were canceled by the Atchison, Topeka & Santa Fe. The commission found that the defendant must be required to join with the complainant in tariffs establishing through routes and naming joint rates from points on the defendant's line to interstate destinations. (24 I. C. C., 161.)

Omaha, Neb., Discriminated Against.

Omaha Grain Exchange v. Chicago, Milwaukee & St. Paul. Opinion by Commissioner Clark:

The commission found that the present rate adjustment from the stations on the defendant's line, between Canton, S. D., and Elk Point, S. D., to Omaha and Minneapolis was unjustly discriminatory against Omaha in favor of Minneapolis, and that the differential on coarse grain in favor of Omaha as against Minneapolis from the stations between Canton and Elk Point should not be less than that now in effect at Canton, which is 1½ cents per 100 lbs. The rates themselves were not found to be unreasonable. (24 I. C. C., 122.)

Santa Rosa, Cal., Discriminated Against.

Santa Rosa Traffic Association v. Southern Pacific et al. Opinion by Commissioner McChord:

The complainant asks to be given terminal rates on westbound transcontinental traffic. Present rates based on rates to the nearest terminal, plus the local rate from the terminal to Santa Rosa, are alleged to be unreasonable and unduly prejudicial to Santa Rosa in favor of San Jose, Santa Clara and other California points now given the benefit of terminal rates, although not strictly terminal points. The commission found that Santa Rosa was more fairly entitled to the terminal rate than some of the cities which now enjoyed that rate. It was argued that Santa Rosa was not in competition with the other towns which are given the terminal rate, and was not so important commercially. The commission found that Santa Rosa would increase in commercial importance and would be in a better position to compete with the other towns if given the terminal rate. It therefore ordered that Santa Rosa should be given the terminal rates as long as those rates were applied to San Jose and Santa Clara. (24 I. C. C., 46.)

Barrel Stave Rates Reduced.

Holland Blow Stave Co. v. Atlantic Coast Line et al. Opinion by Commissioner Meyer:

The complainant attacks carload rates on barrel staves and headings from Decatur, Ala., to all markets, and alleges that the present adjustment discriminates against Decatur, Ala., in favor of Memphis, Tenn. The commission found that the reductions proposed by the Louisville & Nashville would make the rates to the southeastern markets reasonable. The defendant will be given 60 days to make these reductions. To the western markets the present adjustment is found unduly discriminatory to the extent that the Decatur rates exceed by more than four cents the rates from Memphis. In regard to the central markets, the rates were not found to be unreasonable or unduly discriminatory to Decatur. To the Gulf markets it was found that the rate of 15 cents from Decatur appeared to be too high by comparison with the charges received by the Louisville & Nashville on the Memphis traffic for the transportation from Memphis and Birmingham. This, however, related to the reasonableness of the rate, and as the reasonableness was not questioned in the complaint, no conclusion could be reached in regard to it. (24 I. C. C., 81.)

Apple Rates Increased.

In re suspension of advances in rates by carriers for transportation of apples in carloads. Opinion by Commissioner McChord:

Upon complaint of Minneapolis and St. Paul apple dealers the proposed changes in apple rates from southwestern Missouri points to St. Paul, Minneapolis, and other points in that territory from a commodity rate to the fifth class rate were suspended. These changes would have resulted in an increase of about seven cents per 100 lbs. The commission found that apples, with few exceptions, took the fifth class rate, and that in this case the proposed increased rates were not unreasonable and that the application of increased rates would remove certain discriminations now existing. The order suspending the increased rates will be vacated. (24 I. C. C., 38.)

Boston, Ga., Discriminated Against.

Mayor and Council of Boston, Ga., v. Atlantic Coast Line et al. Opinion by Commissioner McChord:

The complainant alleges that Boston is unduly discriminated against in favor of Thomasville, Ga., Valdosta and Quitman by the higher rates charged to Boston on all traffic from New York and other points. The commission found that the dissimilarity of conditions at the points mentioned was not such as to warrant a differential at Boston over the other towns, and ordered that this differential be removed. The financial inability of the defendants to extend to Boston the Thomasville-Quitman rates, even if this could be established as a fact, is no answer to the charge of undue discrimination. (24 I. C. C., 50.)

Coal Rates Reduced.

Marian Coal Co. v. Delaware, Lackawanna & Western. Opinion by Commissioner Meyer:

The complainant charges that the defendant's rates, local and proportional, on anthracite coal from Taylor, Pa., to all points on the defendant's line are unreasonable. The commission found that the defendant's rates per long ton on anthracite coal in carloads from Taylor, Pa., to Hoboken, N. J., or New York Lighterage Station, N. J. (f. o. b. vessel) of $1.58 on prepared sizes, $1.43 on pea and $1.28 on buckwheat, are excessive and unreasonable to the extent that they exceed $1.33 on prepared sizes, $1.24 on pea and $1.09 on buckwheat, and that for the future the latter rates must not be exceeded. Reparation will be awarded upon the basis of the rates found reasonable on such shipments as were delivered within two years prior to the date of filing the complaint. (24 I. C. C., 140.)

Grain Rates Equalized.

Superior Commercial Club of Superior, Wis., v. Great Northern et al. Chamber of Commerce of the City of Milwaukee v. Chicago, Milwaukee & St. Paul et al. Duluth Board of Trade v. Great Northern et al. Opinion by Commissioner Clark:

The complainants allege that the rates on grain from points in North and South Dakota, southern Minnesota and northern Iowa to Superior, Wis., and Milwaukee, and to Duluth, Minn., are unreasonable as compared with the rates from that territory to Lake Michigan ports, Minneapolis and other markets; and that rates on grain products from Superior, Wis., via lake and rail to the Atlantic seaboard points are unjustly discriminatory as compared with the similar rates from Chicago. The commission found that the evidence of unjust discrimination in lake and rail rates on grain products was not conclusive, and that in regard to the grain traffic in that territory, the circumstances and conditions of transportation were so substantially similar that distance must be the controlling factor. Rates from South Dakota, Minnesota and Iowa to Duluth and Superior should not exceed the rates to Milwaukee or Chicago for equal distances. Rates to Milwaukee from points in South Dakota, Minnesota and Iowa should not exceed the rates to Duluth and Superior for equal distances. Distances are to be measured by the short line of the originating system having lines to Duluth and Superior, and to Milwaukee or Chicago, the Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha being considered as one system and the Chicago, Milwaukee & St. Paul as having its own rails to Duluth. The Great Northern's differential to Willmar as between Minneapolis and Duluth and Superior should not exceed three cents, and that differential should not be exceeded from any point on the Great Northern beyond Willmar to and including Sioux City, Yankton and Huron. Where because of difference in distance the rates are different from a junction point of a carrier's main line or branches, the differential should not be higher from points beyond which traffic moves through that junction than at such junction point. Through rates via the Soo line, the North Western-Omaha system or the Chicago, Milwaukee & St. Paul to Duluth and Superior via Minneapolis should in no case exceed the rates from the same points to Minneapolis by more than four cents. Where distances are not equal, the differentials should fairly reflect the differences in distance, and

except from points where rates are held down by actual competition, the rates should grade up gradually by distance. The request for the establishment of through routes and joint rates to Duluth and Superior via the Great Northern crossings was denied. (24 I. C. C., 96.)

Increased Coal Rates Held Unreasonable.

In re suspension of advances in rates by carriers for the transportation of soft coal. Opinion by Commissioner McChord:

Rates on soft coal from Springfield and southern Illinois mines to stations on the Missouri Pacific in Kansas and Nebraska were increased by the cancellation of joint rates and the application of combinations of intermediate rates. The complaint was filed by coal operators on the tracks of the Chicago, Burlington & Quincy at Christopher, Ill. Christopher, which is also reached by the Illinois Central, is 82 miles east of East St. Louis over the tracks of that line. The traffic originating on the tracks of the Chicago, Burlington & Quincy at Christopher does not move through East St. Louis, but is shipped over the Chicago, Burlington & Quincy to the Missouri river, where for a number of years it has been delivered to the Missouri Pacific for transportation to local points on that line at a joint rate made by the addition of 40 cents over the East St. Louis rate. The local rate from Christopher to East St. Louis over the Illinois Central tracks is 40 cents. The Chicago, Burlington & Quincy makes no rate to that point, to reach which it would have to haul the traffic via Concord, a distance of 257 miles. In September, 1911, the Missouri Pacific withdrew the application of the joint rates and substituted combination rates which resulted in some instances in an increase of from 20 cents to 88.4 cents a ton. This schedule was suspended by the commission. A few days later the Missouri Pacific restricted the application of the joint rates to East St. Louis in connection with the Missouri Pacific, thereby forcing the Chicago, Burlington & Quincy to transport coal to East St. Louis, a distance of 257 miles, for 40 cents a ton. The Chicago, Burlington & Quincy insisted that the former joint rates were reasonable and that the controversy was due to the selfish desire of the Missouri Pacific not only to deprive it of a haul to which it was jointly entitled, but also to compel it to make delivery to the Missouri Pacific at East St. Louis at a ridiculously low division of the joint rate. The shipper is not interested in the division but in the route. It was testified that traffic via the route dictated by the Missouri Pacific would be subjected to a delay of more than a week over the former route. The commission found that the route via East St. Louis was impracticable and that the proposed increases in rates had not been shown to be reasonable. The commission ordered that the rates heretofore in effect be restored, that is, a joint rate be published applicable from complainant's mines at Christopher via the Chicago, Burlington & Quincy, the Missouri river and the Missouri Pacific to points of destination on the Missouri Pacific in Kansas and Nebraska which will not exceed 40 cents a ton above the current East St. Louis rate. (24 I. C. C., 43.)

STATE COMMISSIONS.

The Wisconsin commission has issued an order stating that it cannot compel common carriers to reimburse passengers who miss connections at junction points.

The Louisiana commission has announced that the hearing called to consider the adoption of a rule relative to wire screens in the windows of passenger cars is postponed until a later session at the request of the state board of health, in view of the fact that the Southern Medical Association intends taking some action regarding railway sanitation at its annual meeting in the fall.

The establishment of a division of transportation by the New York State Public Service Commission, Second district, was noticed in our issue of June 14, page 1355. The vacant inspectorship has been filled by the appointment of H. K. Eggleston, heretofore general roadmaster of the New York, Westchester & Boston. Mr. Eggleston has had twenty years' experience in railway work, having begun as a water boy on the New York Central. For a time he was supervisor of track, bridges and buildings, on the Central New England.

Railway Officers.

ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

O. G. Parsley, traffic manager of the Missouri, Oklahoma & Gulf at Kansas City, Mo., has been elected vice-president of the Missouri, Oklahoma & Gulf of Texas.

Erle C. Cowgill, assistant to the president of the Illinois Central, with office at Chicago, has resigned, effective July 1, to become secretary and treasurer of the M-C-B Company, Chicago.

E. R. Lewis, division engineer of the Michigan Central at Bay City, Mich., has been appointed assistant to the vice-president of the Duluth, South Shore & Atlantic, with office at Duluth, Minn.

C. W. Veitch, formerly assistant secretary and assistant treasurer of the Texas & Pacific, has been appointed secretary and treasurer, with office at New York, succeeding C. E. Satterlee, deceased.

B. A. Worthington, receiver of the Wheeling & Lake Erie at Cleveland, Ohio, has been elected president of the Chicago & Alton, with office at Chicago, succeeding Theodore P. Shonts, resigned to devote his time to the New York traction interests. (See an article on a preceding page.)

W. M. Duncan, who has been acting as legal adviser to the receiver of the Wheeling & Lake Erie, has been appointed receiver of that road and subsidiary companies, effective June 20, by the United States district court of the northern district of Ohio, with office at Cleveland, Ohio, succeeding B. A. Worthington, resigned to become president of the Chicago & Alton.

The Continental Trust Company and Marshall B. Smith, having been appointed receivers of the railway and business of the Denver, Laramie & Northwestern, the office of general attorney has been abolished, and W. H. Bryant and W. W. Garwood have been appointed attorneys for the receivers. A. F. Dodd, general auditor, has been appointed auditor for the receivers, with office at Denver, Colo.

The practice of designating the several vice-presidents of the Grand Trunk Pacific by numbers has been discontinued. Wm. Wainwright, first vice-president, is now vice-president; M. M. Reynolds, second vice-president, is now vice-president in charge of financial and accounting departments; M. Donaldson, superintendent of the Grand Trunk at Ottawa, Ont., has been appointed vice-president and general manager of the Grand Trunk Pacific lines west of Fort William, in charge of construction, transportation and maintenance departments, and J. E. Dalrymple, fourth vice-president, is now vice-president in charge of traffic.

Theodore Perry Shonts, who has resigned as president of the Chicago & Alton to devote his time to his traction interests as president of the Interborough-Metropolitan Company in New York City, was born in Crawford county, Pennsylvania, on May 5, 1856. He graduated from Monmouth College (Illinois) in 1876 with the degree of A. B., and the M. A. degree was conferred on him by the same college three years later. After graduation he became an accountant and also studied and practiced law for a time at Centerville, Iowa. He began railway work in July, 1881, as superintendent of the Iowa Construction Company. He had charge of the construction of the Iowa Central, the Missouri, Iowa & Nebraska and the Indiana, Illinois & Iowa, and was general superintendent of the latter road, now the Chicago, Indiana & Southern, for four years from May, 1882. He was made general manager in 1886, and from June 16, 1898, to January, 1902, he was president and general manager. Since January, 1904, he has been president of the Toledo, St. Louis & Western, part of the time having been general manager also. He was made president of the Chicago & Alton in the latter part of 1907. From 1905 to February, 1907, he was chairman of the Isthmian Canal Commission, formulating plans for that work. He was elected president of the Interborough Rapid Transit Company in New York City in February, 1907, in charge of the subway and elevated systems,

and he is also president of the Interborough-Metropolitan Company.

Operating Officers.

R. L. Stairs has been appointed chief despatcher of the Chesapeake & Ohio of Indiana, with office at Peru, Ind., succeeding J. M. Martin, transferred.

C. W. Cool has been appointed assistant superintendent of the Northern division of the Chicago Great Western, with office at St. Paul, Minn., succeeding S. R. Bunch, resigned.

John D. Purtell, chief despatcher of the Erie, at Dunmore, Pa., has been appointed trainmaster, and Daniel P. McCoy, despatcher at Dunmore, succeeds Mr. Purtell, both with offices at Dunmore.

W. M. Whitenton, general manager of the First district of the Rock Island Lines at Des Moines, Iowa, has been appointed general manager also of the St. Paul & Kansas City Short Line, effective July 1.

F. S. James, superintendent of the Missouri, Kansas & Texas of Texas, at Hillsboro, Tex., has been appointed general superintendent of the Texas Central, with office at Waco, Tex., succeeding W. A. Webb. general manager, promoted.

L. G. Coleman, assistant superintendent of the Grand Trunk, at Belleville, Ont., has been appointed superintendent of the Ottawa division, with office at Ottawa, Ont., succeeding M. Donaldson, whose appointment as vice-president and general manager of the Grand Trunk Pacific has been announced in these columns.

Receivers having been appointed for the Denver, Laramie & Northwestern (see item under Executive, Financial and Legal Officers), J. L. Terry, assistant to the vice-president and general manager and purchasing agent, has been appointed superintendent for the receivers, and the office of general superintendent and chief engineer has been abolished. C. R. Himes has been appointed chief despatcher and trainmaster for the receivers, with office at Denver, Colo.

Thomas Collins, whose appointment as superintendent of the Canadian Pacific, with headquarters at Chapleau, Ont., has been announced in these columns, was born at Toronto, Ont., and was educated at St. Helen's School, Toronto, and at Guelph Business College. Mr. Collins began railway work as a brakeman, in September, 1885, with the Canadian Pacific, and has been in the service of that company ever since. In March, 1887, he was promoted to conductor, and from August, 1906, to June, 1909, was trainmaster. He was appointed assistant superintendent in June, 1909, which position he held at the time of his recent appointment as superintendent of the same company, as above noted.

H. F. Coyle, assistant superintendent of the Fourth district of the Grand Trunk, in charge of the Montreal terminal, with headquarters at Montreal, Que., has been appointed assistant superintendent of the Sixth and Seventh districts, with headquarters at Belleville, Ont., succeeding L. G. Coleman, promoted. J. J. Connolly, trainmaster at Island Pond, Vt., succeeds Mr. Coyle, with headquarters at Montreal, and the jurisdiction of J. W. Farrell, trainmaster at Island Pond, has been extended to include the Second district, with headquarters at Island Pond. J. W. Canatsy has been appointed general yardmaster of the Montreal, Que., terminals, succeeding X. J. Schatzle.

William L. Blair, whose appointment as assistant to general manager of the New York, Chicago & St. Louis, with office at Cleveland, Ohio, has been announced in these columns, was born December 27, 1858, at Hamilton, Ohio. He received a high school education and began railway work as a telegraph operator with the Cincinnati, Hamilton & Dayton in 1872, and remained with that road until 1881, having been operator, train despatcher and clerk in the general manager's office. In September, 1881, he went with the New York, Chicago & St. Louis as chief clerk to the general manager, and he has been with that road ever since. He was superintendent of the Eastern division from Sptember, 1893, to March, 1901, and again from October, 1905, to October, 1906, having been superintendent of telegraph from 1901 to 1905. He was made superintendent of transportation in October, 1906, which position he held until June 15, 1912, the date of his appointment as assistant to general manager as above noted.

Fred M. Hawley, whose appointment as superintendent of the Allegheny and Bradford divisions of the Erie Railroad, with office at Salamanca, N. Y., has been announced in these columns, began railway work in June, 1879, as an operator on the Western division of the New York, Lake Erie & Western, now the Allegheny division of the Erie Railroad, at Andover, N. Y., and in December, 1882, he was appointed train despatcher of the Bradford division, at Bradford, Pa. In April, 1889, he was made chief despatcher of the same division. From March, 1901, to November of the same year, he was passenger trainmaster on the Allegheny, the Susquehanna and the Delaware divisions, and from November, 1901, to June, 1906, he was chief despatcher of the Bradford division. He was then chief despatcher of the Allegheny division until January, 1907, when he became trainmaster of that division, and since October, 1907, he was trainmaster of the Delaware and Susquehanna divisions until his recent appointment as superintendent of the Allegheny and Bradford divisions of the same road.

Traffic Officers.

C. F. Verlander has been appointed soliciting freight agent of the Missouri Pacific, with office at New Orleans, La.

S. A. Stemmons has been appointed traveling passenger agent of the Trinity & Brazos Valley, with office at Dallas, Tex.

N. C. Osborne has been appointed contracting freight agent of the Seaboard Air Line, with office at New York, succeeding C. J. Kruger, resigned.

E. E. Ellis, district passenger agent of the Southern Pacific and the Oregon-Washington Railroad & Navigation Company at Seattle, Wash., has resigned, effective July 10, to engage in other work.

C. A. Rose has been appointed commercial agent of the Lake Shore & Michigan Southern, with headquarters at Toledo, Ohio, succeeding R. P. Hurley, resigned to accept service with another company.

J. M. Tyler, chief clerk in the passenger department of the Texas & Pacific, has been appointed traveling passenger agent of that road, with office at Birmingham, Ala., succeeding P. A. Baer, assigned to other duties.

W. E. Whitmore, commercial agent of the Seaboard Air Line, with office at Pittsburgh, Pa., is now in charge of the freight traffic moving to and from the Pittsburgh territory via all fast freight lines operated over the Seaboard Air Line.

Receivers having been appointed for the Denver, Laramie & Northwestern (see item under Executive, Financial and Legal Officers), S. K. Martin, general freight and passenger agent, has been appointed traffic manager for the receivers, with office at Denver, Colo.

F. A. McCormick, rate clerk of the Boston & Maine, has been appointed assistant general passenger agent, with office at Boston, Mass., succeeding F. T. Grant, resigned to go to another company. C. P. Kimball, assistant rate clerk, succeeds Mr. McCormick.

F. D. Claggett has been appointed assistant general freight agent of the Cincinnati, New Orleans & Texas Pacific, in charge of freight tariffs and rates, and J. B. Ford has been appointed assistant general freight agent in charge of the solicitation department, both with offices at Cincinnati, Ohio.

The general Southern agency of the Wabash having been removed from Atlanta, Ga., to Birmingham, Ala., E. H. Blair, traveling freight and passenger agent at Atlanta, has been appointed general agent, with office at Birmingham. Oscar Plunkett has been appointed traveling freight agent, and G. B. Harris has been appointed traveling passenger agent. George L. Word, general Southern agent at Atlanta, has resigned to engage in other business. Effective July 1.

Engineering and Rolling Stock Officers.

Henry W. Jacobs, assistant superintendent of motive power of the Atchison, Topeka & Santa Fe system, with office at Topeka, Kan., has resigned, effective July 1, to devote his time to private affairs.

D. R. Morris, general construction foreman in the signal department of the Illinois Central, has been appointed signal engineer of the El Paso & Southwestern, with office at El Paso, Tex., succeeding E. E. Backus, resigned, effective August 1.

W. R. Coln, roadmaster of the Rock Island Lines at El Dorado, Ark., has had his territory extended to mile post 107, including El Dorado yard. R. I. Gollehon has been appointed roadmaster of the territory from mile post 107 to Eunice, La., succeeding T. A. Palmer, resigned.

F. B. Marble, division engineer of the Michigan Central, at Detroit, Mich., has been appointed assistant chief engineer, succeeding R. D. Starbuck, resigned. G. H. Harris, division engineer, at St. Thomas, Ont., succeeds Mr. Marble, and W. O. Houston succeeds Mr. Harris.

E. J. Langford, principal assistant to the engineer, of the New York, Westchester & Boston, at New York, has been appointed acting chief engineer, succeeding J. L. Crider, resigned to become a construction superintendent of J. G. White & Company, engineers, New York City, in charge of the extension of the Oakland & Antioch, being built in California under the name of the Oakland, Antioch & Eastern, with headquarters for the present at Oakland, Cal.

J. R. Gould, superintendent motive power of the Virginia general division of the Chesapeake & Ohio and the Chesapeake & Ohio of Indiana, with office at Richmond, Va., has been appointed general superintendent of motive power, succeeding J. F. Walsh, who, upon his own request, has been relieved of the duties of general superintendent of motive power, as has already been announced in these columns. Mr. Walsh will remain in the service of the company in an advisory capacity.

Walter H. Flynn, who has been appointed superintendent of motive power of the Michigan Central, with office at Detroit, Mich., as has been announced in these columns, was born June 24, 1877, at Buffalo, N. Y., and he graduated from the mechanical engineering department of the Michigan Agricultural College in 1899. In September of the same year he began railway work with the Cleveland, Lorain & Wheeling, now part of the Baltimore & Ohio. From September, 1900, to March 1, 1902, he was a draftsman on the Michigan Central, and was subsequently assistant general foreman and general foreman of the same road at Jackson, Mich. He was appointed master mechanic, with office at St. Thomas, Ont., on September 1, 1907, from which position he was recently promoted to superintendent of motive power.

OBITUARY.

James E. Howard, secretary and treasurer of the Pere Marquette, with office at Detroit, Mich., died at Detroit on June 23.

W. K. High, formerly master mechanic of the Cleveland, Cincinnati, Chicago & St. Louis, with office at Mattoon, Ill., died at Mattoon on June 22. Mr. High was placed on the pension roll of the company last November.

W. Butler Duncan, chairman of the board of directors of the Mobile & Ohio, died on June 20, at his home in New York City. Mr. Duncan was born on March 17, 1830, at Edinburgh, Scotland, and attended school in Edinburgh and later graduated from Brown University, Providence, R. I., in the class of 1860. Five years after his graduation he became head of the banking firm of Duncan, Sherman & Company, and in 1874 was elected president of the Mobile & Ohio. Since 1888 he has been chairman of the board of directors of that company.

The Dutch have appropriated $15,000,000 for building a railway across the island of Sumatra. Forces for building it will be brought from Java, and the work is to be completed in six years.

Work is steadily progressing on the Anglo-Argentine Tramway, the new underground line in Buenos Aires, Argentina. About 1,000 men are employed on the excavations. Between the terminal points there will be 11 stations, all on the same plan, with two platforms in each. The terminal stations will be larger and contain three platforms.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

THE CHESAPEAKE & OHIO has ordered 25 mikado locomotives from the American Locomotive Company.

THE HUNAN-YUEH-HAN, China, has ordered 3 mogul locomotives from the Baldwin Locomotive Works.

THE CENTRAL RAILWAY OF BRAZIL has ordered 6 consolidation locomotives from the Baldwin Locomotive Works.

THE LOUISVILLE, HENDERSON & ST. LOUIS has ordered 3 ten-wheel locomotives from the Baldwin Locomotive Works.

THE DENVER & RIO GRANDE will place orders at once for 16 Mallet locomotives, 14 mikado locomotives and 6 passenger locomotives.

THE VULCAN IRON WORKS, Wilkesbarre, Pa., has received orders for locomotives as follows: Winston Brothers Company, Minneapolis, Minn., 1 locomotive; Kentucky Portland Cement & Sand Company, 1 locomotive.

THE PENNSYLVANIA LINES WEST have ordered 32 consolidation locomotives and 5 Pacific type locomotives from the company's shops at Altoona, Pa., and 13 switching locomotives from the Lima Locomotive & Machine Company.

THE MONTPELIER & WELLS RIVER has ordered 2 eight-wheel locomotives from the American Locomotive Company. The dimensions of the cylinders will be 18 in. x 24 in., the diameter of the driving wheels will be 69 in., and the total weight in working order will be 128,000 lbs.

MITSUI & COMPANY, New York, have ordered 1 six-wheel switching locomotive from the American Locomotive Company. The dimensions of the cylinders will be 13 in. x 18 in., the diameter of the driving wheels will be 36 in., and the total weight in working order will be 62,000 lbs.

THE CENTRAL OF NEW JERSEY has ordered 2 eight-wheel switching locomotives from the American Locomotive Company. The dimensions of the cylinders will be 23½ in. x 30 in., the diameter of the driving wheels will be 55 in., and the total weight in working order will be 227,000 lbs.

THE CARNEGIE STEEL COMPANY, Pittsburgh, Pa., has ordered 2 six-wheel switching locomotives from the American Locomotive Company. The dimensions of the cylinders will be 20 in. x 26 in., the diameter of the driving wheels will be 51 in., and the total weight of the locomotives in working order will be 151,000 lbs.

THE GRAND TRUNK has ordered 41 Pacific type locomotives from the Montreal Locomotive Works. All these locomotives will be equipped with superheaters, will have 23 in. x 28 in. cylinders, and in working order will weigh 223,000 lbs.; 31 locomotives will have 69 in. driving wheels, and 10 locomotives will have 73 in. driving wheels.

CAR BUILDING.

THE SOUTHERN RAILWAY has ordered 4 dining cars from the Barney & Smith Car Company.

THE LEHIGH VALLEY is in the market for three 70-ft. combination baggage and express cars.

THE DENVER & RIO GRANDE will place orders at once for 1,200 cars, including 700 box cars, 350 coal cars, 100 stock cars and 50 cabooses.

THE ST. LOUIS ROCKY MOUNTAIN & PACIFIC is said to be in the market for 500 steel underframes. This item has not been confirmed.

THE PHILADELPHIA & READING has ordered 500 gondola cars from the Cambria Steel Company. These cars were mentioned in the *Railway Age Gazette* of June 21 as having been bought by the Central of New Jersey.

Supply Trade News.

A bill asking the foreclosure of the property of the Allis-Chalmers Company, Milwaukee, Wis., in Chicago, has been filed in the United States district court, by the Continental & Commercial National Bank.

W. A. Austin, for a number of years in the enginering department of the Baldwin Locomotive Works, Philadelphia, Pa., with office in that city, has resigned that position to go to the Lima Locomotive & Machine Company, Lima, Ohio, as chief mechanical engineer, with office at Lima.

The Collins Metallic Packing Company, Philadelphia, Pa., has received orders for Collins wheel flange lubricators for the 22 locomotives ordered by the Delaware, Lackawanna & Western from the American Locomotive Company, New York, which were mentioned in the *Railway Age Gazette* of March 15.

The Track Supply Association will hold an exhibit in connection with the thirtieth annual convention of the Roadmasters' and Maintenance of Way Association at the Hotel Statler, Buffalo, N. Y., September 9 to 13. The association is anxious to obtain at once the names of all desiring to exhibit. Particulars may be had by addressing F. A. Preston, secretary and treasurer, P. & M. Company, Chicago.

The McKeen Motor Car Company, Omaha, Neb., has recently shipped two all-steel gasolene motor cars to the Victorian State Railways, Australia, where they were placed in operation for cross-country and branch line service. The interior finish is polished mahogany, and the walls are insulated to retain an even temperature. The cars are divided into six compartments, a semi-circular rear end forming an observation car.

Edward Henry Keating, formerly city engineer of Toronto, Ont., and later general manager of the Toronto Railway, died at his home in Toronto on June 17 at the age of 68. He had been failing in health for some time. Mr. Keating obtained his technical training under George Whiteman, provincial engineer for Nova Scotia, and under Sir Sanford Fleming. In 1892 he was made city engineer of Toronto, in which capacity he distinguished himself. In 1898 he resigned that position to become general manager of the Toronto Railway, which position he held until 1904. He then was made manager and engineer for the Mackenzie and Mann syndicate in Mexico. Since 1905 Mr. Keating has been identified with Keating & Breithaupt, Toronto, consulting engineers.

The M-C-B Company, Chicago, recently incorporated under the laws of Illinois, will have the following officers and stockholders: President, Walter E. Marvel; secretary and treasurer, Erle C. Cowgill; vice-president, Frank A. Buckley. Mr. Marvel was for several years manager of the St. Louis branch of the Buda Company, Chicago, and later western sales manager of the Detroit Seamless Steel Tubes Company, Detroit, Mich. Mr. Cowgill is assistant to President Markham of the Illinois Central, and will sever his connection with that road July 1. Mr. Buckley is western representative of the Armspear Company, New York, and the Central Railway Signal Company of Pittsburgh. The new company derives its name from the first letters of the surnames of its officers and stockholders. The Chicago offices will be located in the McCormick building. The M-C-B Company, in addition to making several of its own patented devices, has secured the exclusive sole rights in western territory from some of the foremost manufacturers of the following lines: Miscellaneous cars for traction lines; snow plows, flangers, sweepers and ice diggers for steam and electric lines; pneumatic tools for railway shop work; track and bonding drills, tool grinders, cattle guards, jacks, handmade chains, locomotive water gages, track tools, anti-rail creepers, portable kerosene lights, etc.

TRADE PUBLICATIONS.

Brake Beams.—The Damascus Brake Beam Company, Cleveland, Ohio, has issued a 78-page excellently printed and illustrated catalogue including drawings and photographs of, and descriptive data and specifications regarding, the "Waycott Special," "Anglrod" and "Damascus" brake beams, the "Brascott" freight car ladder and miscellaneous appliances.

Railway Construction.

New Incorporations, Surveys, Etc.

Astoria Southern.—This company has begun condemnation proceedings, it is said, to secure a right of way in the Klaskanine river district, Ore. The plans call for building about six miles towards Nehalem valley. The company was incorporated to build to the Nehalem valley and eventually to Tillamook. The original incorporators included: L. W. Humphreys, W. E. Thomas and O. J. Kraemer, all of Portland, Ore. The Western Cooperage Company is said to be back of the project.

Canadian Northern.—This company is offering stock, the proceeds of which are required for the acquisition, construction or extension and equipment by the Canadian Northern System Terminals, Ltd., of certain terminal and hotel facilities at important central points on the system, to be used by the Canadian Northern under permanent lease or agreement. (See an item under Railway Financial News.)

An officer is quoted as saying that the new construction to be started this year will include 500 miles of extensions in Alberta, and probably 1,300 miles of new track on a branch to Thief River Landing.

Canadian Northern System Terminals, Ltd.—See Canadian Northern.

Canadian Pacific.—Bids are being asked for clearing an extension from Gimli, Man., north to Riverton on the Icelandic river. The Canadian government has granted a subsidy of from $3,200 to $6,400 a mile for building this extension, not to exceed 35 miles, in place of the subsidy granted in 1906.

A grading contract has been given to Dutton & Timson, Winnipeg, Man., for work between Kerrobert, Sask., and Reford. The Canadian board of railway commissioners has approved the location plans for the first 20 miles. J. G. Sullivan, chief engineer, Western lines, Winnipeg, Man. (December 8, p. 1188.)

The Canadian government has entered into an agreement with the Southampton Railway to build from a point on the Gibson branch of the Canadian Pacific near Millville, N. B., to a point on the St. John river near Pokiok bridge, 13 miles. The New Brunswick government will guarantee the bonds to the extent of $10,000 a mile on condition that the line will be leased to the Canadian Pacific. H. H. McNally is president, and D. Brown, chief engineer, of the Southampton Railway. (May 3, p. 1027.)

A contract has been given to Deeks & Hinds, Toronto, Ont., for the grading and bridge work on 60 miles of double-tracking work between Port Arthur, Ont., and Sudbury. The work is to be finished before the coming winter.

Chicago, Milwaukee & Puget Sound.—An officer writes that contracts have been given to Winston Brothers, Minneapolis, Minn., and to Twohy Brothers, Portland, Ore., to build from Lewiston, Mont., to Great Falls, 137 miles. The work will be fairly heavy. E. O. Reeder, chief engineer, Seattle, Wash. (June 14, p. 1364.)

Dominion Atlantic.—A subsidy agreement has been entered into with the Canadian government to build a one-mile branch to the government pier at Canning, N. S. P. Gifkins, general manager, Kentville.

Hudson Bay Railway.—Bids are wanted on August 1, by L. W. Jones, secretary of the Department of Railway and Canals, Ottawa, Ont., to build a section of about 68 miles from Thicket Portage to Split Lake Junction. Plans are on file at the office of the chief engineer of the Department of Railways and Canals, Ottawa, and at the office of John Armstrong, chief engineer of the Hudson Bay Railway, Winnipeg, Man. According to press reports F. D. Hazen, a Dominion government engineer, is now on his way to Port Nelson, Keewatin, to commence work on the railway terminal at that place. (June 7, p. 1262.)

Joliette & Lake Manuan Colonization.—The Canadian government has granted a subsidy of from $3,200 to $6,400 a mile, to build from Joliette, Que., to Lake Manuan, 60 miles. The Enterprise Construction Company of New York and Ottawa is building the line. J. N. Patton, chief engineer, St. Felix de Valoix, Que. (May 3, p. 1027.)

Kansas City, Mexico & Orient.—According to press reports, construction work is to be resumed on the extension

from Granada, Tex., to Fort Stockton, 32 miles. The contract and receiver's certificates, providing for the extension, have been approved by the court. It is understood that as soon as this section is finished, construction work will be carried out on the section southwest to Alpine, 62 miles. (June 7, p. 1262.)

LEHIGH & NEW ENGLAND.—This company will open for business on July 8 the extension from Danielsville, Pa., west to Tamaqua, 33 miles. Trackage rights have been secured over the Lehigh Coal & Navigation Company's line between Tamaqua and Hauto, also on a branch between Lansford and Summit Hill. F. W. Gilcreast, chief engineer, Mauch Chunk. (June 7, p. 1262.)

LOUISVILLE & NASHVILLE.—According to press reports, surveys are being made for a branch from Irvington, Ala., to Alabama Port, Ala. W. H. Courtenay, chief engineer, Louisville, Ky.

NEBRASKA & NORTHWESTERN.—This company expects to start survey work soon on a line from Bassett, Neb., northwest to Springview, about 25 miles. The plans call for building a bridge over the Niobrara river in Keyapaha and Rock counties. C. E. Leahr, Springview, is interested. (See Nebraska Roads, February 23, p. 360.)

NEW ORLEANS & WESTERN (Electric).—Incorporated in Louisiana, with $1,500,000 capital, to build from Gretna, La., west to Waggaman, about 10 miles. C. D. Warren, president, and E. Howard McCabe, secretary.

NORTH RAILWAY.—This company, which was incorporated in Quebec under the name of the Northeastern Railway, to build from Montreal, Que., northwest to James Bay, about 500 miles, is making preliminary surveys, and it is expected that contracts for building the line will be let this year. The Canadian government has granted a subsidy for building from a point near Montreal to the National Transcontinental, thence northerly and northwesterly 300 miles; the Quebec government has also granted a subsidy. F. H. Clergue, president, Montreal.

NORTHEASTERN RAILWAY.—See North Railway.

OREGON ROADS.—Surveys are being made for a line from Metolius, Ore., southeast to Prineville, about 25 miles. It is expected that the work will be started early in August. Stanger & Company, St. Louis, Mo., are back of the project.

SOUTHAMPTON RAILWAY.—See Canadian Pacific.

SOUTHERN PACIFIC.—According to press reports, this company will start work at once laying 90 miles of second-track through Tehachapi Pass, Cal. One-half of the cost of the work is to be paid for by the Santa Fe, which will also use the new track.

STANTON & CAVE BLUFF.—Incorporated in Missouri, with $100,000 capital, to build a narrow-gage line from Stanton, Mo., to a point on the Meramec river, 4½ miles. W. H. Bauman, J. P. Boland and J. P. Burleigh, St. Louis, Mo.; P. Dunn, Stanton; and L. J. Mattock, St. James, are interested.

SUGARLAND RAILROAD.—The Railroad Commission of Texas has approved an issue of bonds on the 38 miles of line completed between Ramsey, Tex., and Harlem State Farms, and to pay for the extension from Cabell Station to Rogers. W. T. Eldridge, president and general manager, Sugerland. (See an item under Railway Financial News.)

VIRGINIA-CAROLINA.—An officer is quoted as saying that plans have been made to build an extension from Konnarock, Va., southeast through ore lands in a mountainous section of Virginia and North Carolina to Wilkesboro, N. C., about 40 miles.

YAMPA VALLEY.—Under this name, residents of Craig, Colo., and Denver, are planning to build from a connection with the Denver, Northwestern & Pacific at Steamboat Springs, Colo., west to Craig, about 40 miles. J. J. Argo is said to be back of the project.

RAILWAY STRUCTURES.

ALLENTOWN, PA.—A contract has been given to McArthur Brothers, New York, for the construction of the Eighth street bridge in Allentown. The bridge to be built by the Allentown Bridge Company, a subsidiary of the Lehigh Valley Transit Company, with a view to inaugurate a fast service between Allentown and Philadelphia. The contract is said to be worth $306,000. (January 5, p. 37.)

BOONE, IA.—The Fort Dodge, Des Moines & Southern will erect a steel trestle to replace the present wooden bridge over the Des Moines river at an estimated cost of $60,000.

BROCKWAYVILLE, PA.—See East Salamanca, N. Y.

DALLAS, TEX.—Tentative plans have been agreed on for the construction of a new union passenger station at this point for the use of ten railways. The erection of the station has been ordered by the state railway commission.

EAST SALAMANCA, N. Y.—The Buffalo, Rochester & Pittsburgh has given contracts for improvement work as follows: Brick passenger station and office building at East Salamanca, contract let to George B. Elwell, Wellsville, N. Y.; brick passenger station at Warsaw, contract let to Porter & Nicholson, Warsaw; brick passenger station at Brockwayville, Pa., contract let to G. F. Miller & Son, Salamanca; for lining the Indiana tunnel with masonry at Indiana, Pa., contract let to P. G. McGovern, Indiana.

EL PASO, TEX.—The El Paso & Southwestern has awarded a contract to W. L. Pearson & Company, of Houston, for the construction of a new freight station and warehouse and a roundhouse.

GOWANDA, N. Y.—The New York Public Service Commission, Second district, has ordered the elimination of the grade crossing over the Erie Railroad in Gowanda. The highway is to be carried under the tracks by means of a subway, with a clear headroom of 13 ft. The order was made following an application by the state commission of highways, and the state's proportion of this elimination will be paid from the good roads fund.

GREEN BAY, WIS.—It is reported that the Chicago & North Western will build a 60-stall roundhouse and machine shop.

INDIANA, PA.—See East Salamanca, N. Y.

KALAMAZOO, MICH.—The Michigan Central is to begin work at once on the construction of a large roundhouse and machine shop.

KANSAS CITY, MO.—The Kansas City Terminal Railway has awarded a contract to the Concrete Foundation Company of Kansas City for concrete work on the South Broadway viaduct in connection with the new terminal station, involving an expenditure of approximately $50,000.

MILWAUKEE, WIS.—The Chicago & North Western will begin work at once on an addition to its freight house facilities to cost about $150,000, and will elevate its tracks from National avenue to the Kinnickinnic river and along Milwaukee river, at a cost of about $1,000,000.

NEWPORT NEWS, VA.—The Chesapeake & Ohio has decided to build a new steel and concrete pier at Newport News, to cost about $1,500,000.

NEW YORK, N. Y.—A contract has been given to the North Eastern Construction Company, New York, to begin work on the new station of the Brooklyn Bridge in the borough of Manhattan. The contract is for excavation and masonry work and includes connecting the tracks of the subway under the new Municipal building with the Brooklyn Rapid Transit tracks. The contract for the super-structure has not yet been let.

NORFOLK, VA.—The union passenger station of the Norfolk Terminal Railway, at Norfolk, was opened for business on June 1.

PHILADELPHIA, PA.—Plans are made for putting up a new pier between Fitzwater and Catharine streets for the Philadelphia & Reading. The improvements will cost about $300,000.

PORT NELSON, KEEWATIN.—See Hudson Bay Railway under Railway Construction.

SASKATOON, SASK.—The Canadian Pacific has asked for bids for a four-story office building.

TUCSON, ARIZ.—Work has been started on the erection of machine shops for the Southern Pacific, to cost $20,000, and it is estimated that $20,000 additional will be expended for new machinery.

WARSAW, N. Y.—See East Salamanca, N. Y.

Railway Financial News.

Argentine Central.—This 16-mile road was sold for $5,000 on June 15 to William Rogers, of Georgetown, Col. It is 3 ft. gage.

Atlanta, Birmingham & Atlantic.—The receivers have asked permission of the court to issue $5,000,000 receivers' certificates for improvements. The new securities have been taken by Clark, Dodge & Company, and White, Weld & Company, New York. There are $3,250,000 5 per cent. receivers' certificates due July 1.

Canadian Northern.—There was recently offered in London £1,438,356 ($7,191,780) 4 per cent. perpetual consolidated debenture stock at 95. The following is taken from a statement issued by the railway company:

The proceeds of the present issue are required in anticipation of a great increase in business on the opening of the through transcontinental service, for the initial acquisition, construction or extension and equipment by the Canadian Northern System Terminals, Ltd., of certain terminal and hotel facilities at important central points on the system, including Quebec, Montreal, Ottawa, Toronto, Hamilton, Sudbury, Port Arthur, Winnipeg, Brandon, Regina and Calgary. These terminal and hotel properties are, or as acquired will be, vested in the Canadian Northern System Terminals, Ltd., but will be used by the Canadian Northern system under permanent lease or agreement. The Canadian Northern System Terminals, Ltd., has created first mortgage securities to the extent of $7,000,000, which it has sold to the Canadian Northern and which have been deposited with the trustees for the debenture stock. The present issue of £1,438,356 ($7,191,780) of debenture stock is being made against these securities. It is expected that through trains will be running from Quebec to Vancouver early in the spring of 1914.

Chicago & Alton.—Stockholders are to vote on August 19 on the question of authorizing $20,000,000 new 6 per cent. general mortgage bonds of July 1, 1912-1932. The bonds are to be issued at the discretion of the directors either for refunding purposes or for extensions or new acquisitions.

Erie.—The New York Public Service Commission, Second district (up state), has approved the issue of $450,000 5 per cent. notes of June 1, 1912, maturing $90,000 annually from June 1, 1913, to 1917 inclusive. The proceeds are to be used for ore unloading and handling machines at Cuyahoga river, Ohio, and Randall.

Galveston, Harrisburg & San Antonio.—The Texas railway commission has approved the issue of $1,518,000 Galveston-Victoria division 6 per cent. bonds to retire and cancel $1,518,000 New York, Texas & Mexico bonds. The Southern Pacific owns all of the $9,022,000 now outstanding (including the newly authorized) Galveston-Victoria bonds.

Great Northern.—W. H. Dunwoody, vice-president of the Washburn-Crosby (flour) Company, and President Carl H. Gray, of the Great Northern, have been elected directors of the Great Northern, succeeding R. I. Farrington and Edward Sawyer, resigned.

Hocking Valley.—A semi-annual dividend of 4 per cent. has been declared on the stock, nearly all of which is owned by the Chesapeake & Ohio. This makes 7 per cent. paid in the 1912 fiscal year ended June 30. Previous to the declaration of a 3 per cent. semi-annual dividend in November, 1911, the company had paid 4 per cent. dividends annually.

Kanawha & Michigan.—White, Weld & Company, New York, have bought, subject to completion of legal details, $1,200,000 equipment trust 4½ per cent. bonds of July 1, 1912, maturing $60,000 semi-annually from January 1, 1913, to July 1, 1922. These bonds are secured on new equipment costing $1,333,400, the company having paid in cash 10 per cent. of the cost of new equipment. The Chesapeake & Ohio and the Lake Shore & Michigan Southern own more than 95 per cent. of the stock of the Kanawha & Michigan.

Lake Erie & Eastern.—This company and the Lake Erie, Youngstown & Southern, both of which are controlled jointly by the Pittsburgh & Lake Erie and the Mahoning Coal Railroad, have merged.

New York Central & Hudson River.—This company has announced that, having purchased a large majority of the outstanding stock of the New York & Harlem, the Rome, Watertown & Ogdensburg and the Utica & Black River, it will, on June 30, withdraw its offer to pay $175 per $50 share for New York & Harlem, $128 per $100 share for Rome, Watertown & Ogdensburg, and $180 per $100 share for Utica & Black River.

Pere Marquette.—Judge Sessions has refused to consider the objections of the Farmers Loan & Trust Co., and has given permission to the receivers of the Pere Marquette to issue $3,500,000 receivers' certificates.

Pittsburgh & Lake Erie.—See Lake Erie & Eastern.

Sugarland Railroad.—The Texas railway commission has approved the issue of $493,837 bonds secured on the 38 miles of road completed between Ramsey and Harlem State Farms. The commission has also approved $296,834 "construction bonds" to pay for the 24-mile extension from Cabell station to Rogers.

Southern Pacific.—See Galveston, Harrisburg & San Antonio.

Tampa & Gulf Coast.—The Florida *Times Union* quotes President Charles H. Brown as saying that the Tampa & Gulf Coast has bought the Port Richey Railroad. The Port Richey runs from Tarpon Springs, Fla., to Port Richey, eight miles.

Wabash Railroad.—The *Wall Street Journal* says it is now planned, in the reorganization of the Wabash, to retire the present outstanding first refunding and extension 4 per cent. bonds by the payment of 50 per cent. in cash and 50 per cent. in new 4 per cent. preferred stock. The *Wall Street Journal* also says that the cash necessary to carry out this plan will be raised through the assessment of $40 per share on all outstanding stock.

Wabash-Pittsburgh Terminal.—See West Side Belt.

West Side Belt.—Judge Charles P. Orr in the United States district court handed down an order on June 26 directing the receivers to sell the property on the application of the Pittsburgh Construction Company, which holds a judgment note against the railway for $432,000. Louis Marshall, of Untermyer & Marshall, New York, appearing for the reorganization committee of the Wabash-Pittsburgh Terminal, argued against the sale. He said that to compel the disposal of the railway would utterly defeat the plans of the committee, which would soon be able to borrow $11,000,000 and reorganize both the Wabash-Pittsburgh Terminal and the West Side Belt. Judge Orr's order directed the receivers to sell the property to raise money with which to pay the company's indebtedness.

During 1910 the French railway to Yunnan, China, was completed. This line, known as the Yunnan-Anam Railway, extends from Laokai, on the China-Tonkin frontier, to Yunnan, the capital of the province, a distance of about 310 miles. It was opened to traffic in April, 1910. The natives have been quick to realize what the railway means to them, and are projecting a number of branch lines, among them being a line from Mengtsze-Pichichai to the Kochiu tin mines, a distance of about 30 miles. This line will have an abundance of traffic and will probably be profitable at once. Of the projected lines, the most interesting are the lines planned to connect the Chinese north and south system and the French and British lines to the south. The connection with the French lines to the south at Yunnan is not only practicable, but would be realized in a very short time if the Chinese would grant concessions to the French interests involved. This proposed line of development runs both to the north from Yunnan to Luchow, with the plan of connecting with the Chinese east and west lines along the Yangtze river and thus with the northern system, and also to the northeast to connect the French lines with the Kwangtung system, and thence to the systems of the north. When completed this line will be of great importance to the provinces through which it will run.